

What is Responsible Care?

Responsible Care is an initiative of the global chemical industry in which companies, through their national associations, commit to work together to continuously improve the health, safety and environmental performance of their products and processes, and so contribute to the sustainable development of local communities and of society as a whole.

Responsible Care is managed by industry and focuses on improving performance, communication and accountability.

Responsible Care improves performance by identifying and spreading good management practices through the publication of codes or guidance documents.

Responsible Care promotes mutual support between companies and associations through experience sharing and peer pressure, replacing the competitive approach of the past in health, safety and environmental areas.

Responsible Care encourages companies and associations to inform their publics about what they make and do, about their performance including reporting performance data, and about their achievements and challenges.

Responsible Care helps the industry to engage and work with stakeholders at local, national and international levels, to listen to and address their concerns and aspirations.

Responsible Care promotes co-operation with governments and organisations in the development and implementation of effective regulations and standards, and helps companies to meet or exceed these requirements.

Responsible Care brings accountability through its requirement that chemical associations develop credible processes to verify that member companies are meeting Responsible Care expectations.

Responsible Care started in 1984 in Canada and is now in 46 countries where more than 85% of the world chemicals (in volume) are manufactured.

Photographs on pages 3, 29 courtesy of Shell Chemicals.

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Foreword



Jean-Pierre Tirouflet
Cefic President and
Chairman of the ICCA Board

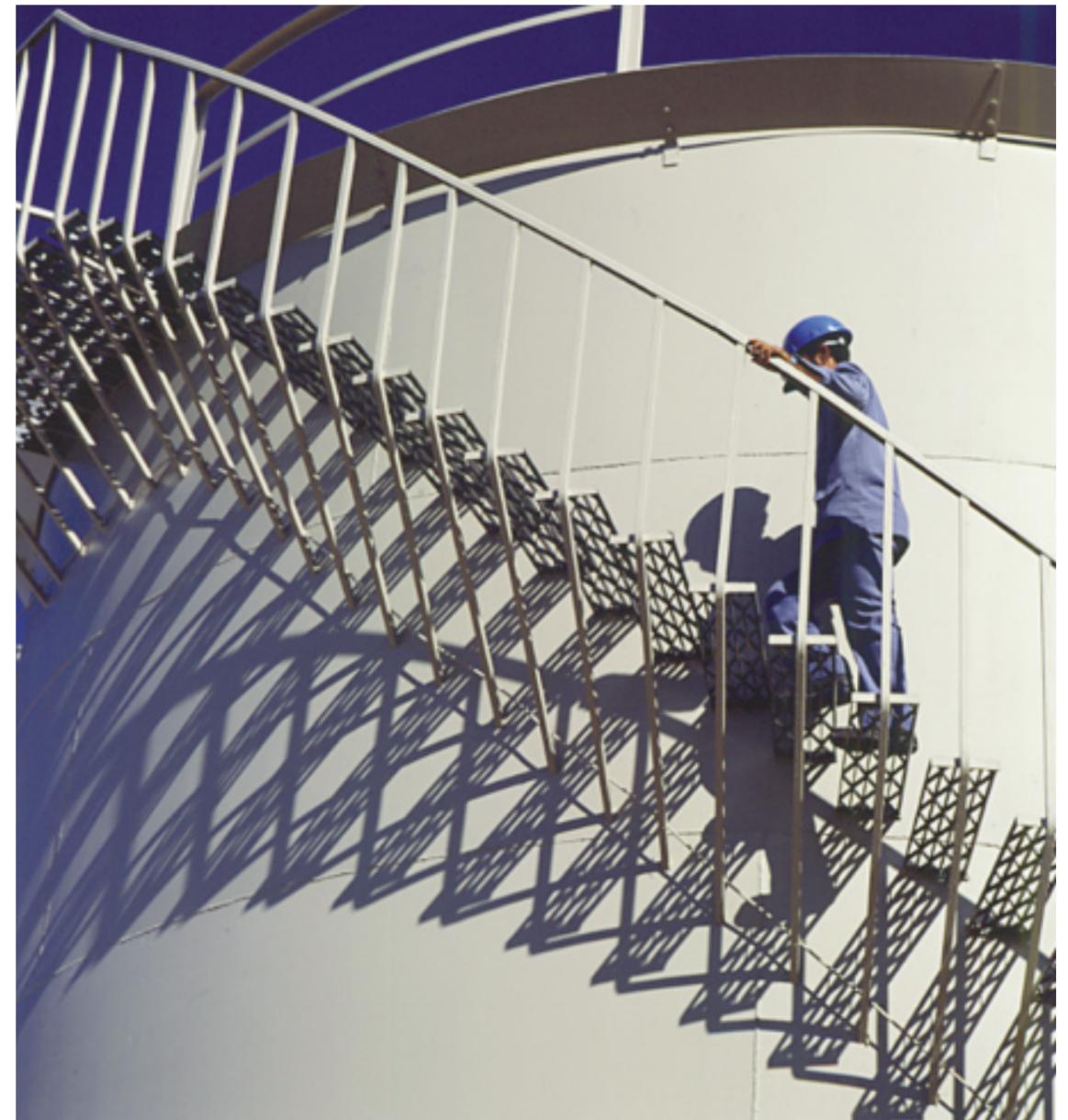
I am pleased to present to you this fourth status report on the global chemical industry's voluntary initiative, Responsible Care. Not only is it one of the longest running voluntary initiatives, but also it is our industry ethic and core value. Since its launch in Canada in the early 1980s, it has been extended to include all our health, safety and environmental activities and developed to respond positively and sympathetically to stakeholder concerns.

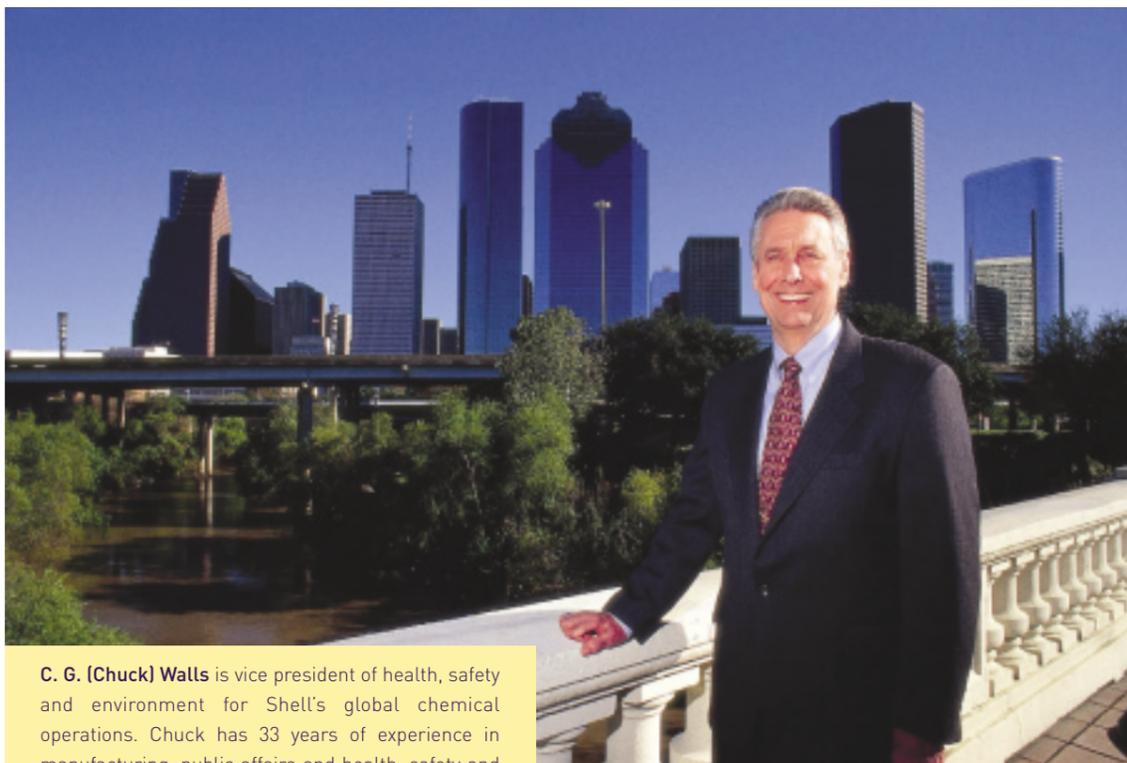
Responsible Care programmes are now being implemented in 46 countries, and this report gives a 'camera shot' of the current state of implementation. You will note that some performance data collected from around the world is included so you can judge at least one aspect of the success of Responsible Care, that of driving continuous improvement in safety, health and environmental performance. We recognise however, that much more remains to be done, and our goal is that all programmes must be transparent and consistent. This is just one of several goals now being pursued by the Responsible Care Leadership Group, which is charged by the ICCA Board of

Directors to promote, monitor and support member Federations in their implementation of Responsible Care, to review programmes, and where appropriate to offer help and assistance.

We live in a rapidly changing world, and our Responsible Care initiative will remain relevant only if it responds to current and future needs and requirements of the industry and our stakeholders. Responsible Care has shown what can be achieved on the environment and has much in common with Sustainable Development. We are therefore now addressing how we should link our efforts beyond the environment in the additional and important aspects that make up Sustainable Development. I am sure you will see a very positive response in our next Status Report.

I wish to take this opportunity to thank all the members of the Responsible Care Leadership Group from so many countries for their work in compiling this Report, and I hope you, the reader, will find it interesting. I welcome any suggestions you may have on how we can improve on it, and areas you believe we should address in our next Status Report.





C. G. (Chuck) Walls is vice president of health, safety and environment for Shell's global chemical operations. Chuck has 33 years of experience in manufacturing, public affairs and health, safety and environment in both Europe and the United States. His term as ICCA RCLG chairman will run for two years (2002 and 2003).

ICCA Responsible Care Leadership Group Chairman's Introduction

In the few short months that I have been chairman of the ICCA Responsible Care Leadership Group, I have been impressed by the enthusiasm and commitment of the people – from chemical companies and associations – engaged in making Responsible Care happen around the world.

As I think about this year's World Summit on

Sustainable Development – Rio +10 – I realize that Responsible Care's incredible growth over the last ten years is a testament to the fundamental strength of the initiative and the commitment of the chemical industry to improve its health, safety and environmental performance and improve its communications with the public at large.

Writing this in early July, there are just a few short weeks to the Johannesburg summit. Tens of thousands of delegates, officials and numerous non-governmental organizations will gather to chart new pathways on the journey of sustainable development. I believe that the summit presents the chemical industry a major opportunity to discuss with the delegates the links between Responsible Care and sustainable development, and to show we are an industry that is a reliable partner in achieving progress toward sustainable development.

One year ago, the RCLG approved three core strategies to help it achieve its goals. Those strategies call for the RCLG to: achieve global understanding of, and commitment to, a common Responsible Care ethic; improve the quality of association Responsible Care initiatives worldwide; and effectively communicate and dialogue with internal and external stakeholders. As proud as we can be of our progress in the last ten years, the chemical industry knows that further progress is required in the next ten years, and participation in the WSSD gives us a powerful vehicle to further these strategies.

As part of the summit preparation process, the UN Environment Programme (UNEP) facilitated preparation of the ICCA's sectoral report on the chemical industry. In it, we state that "Responsible Care was a great innovation at that time and is still the most sophisticated, comprehensive and ambitious voluntary HS&E program conducted by any industry sector in the world." The chemical industry can be justifiably

proud of Responsible Care, but we also know we cannot be complacent. At the summit, the participants from ICCA will emphasize Responsible Care's contribution to sustainable development, and report on Responsible Care's progress, while acknowledging the further work and challenges that remain.

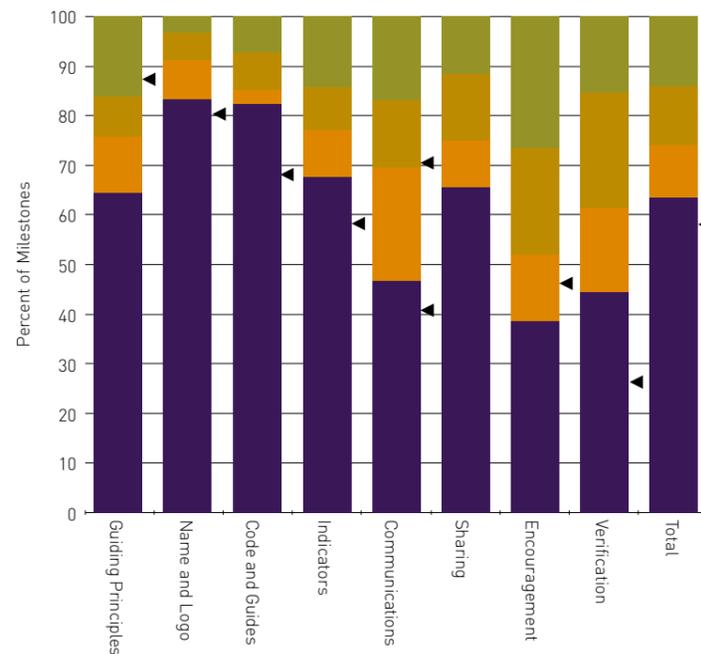
As governments, non-governmental organizations, and international agencies gather at the summit to reach agreement on new ways to accelerate society's progress toward sustainable development, the chemical industry will be part of the process. Responsible Care has positively positioned the chemical industry for discussions about sustainable development. From what I have learned about sustainable development within Shell Chemicals, however, I believe that, as an industry, we are really just beginning our sustainable development journey. More is to come.

The UNEP sector report includes a section on future challenges that emphasizes product stewardship, increasing the ability of developing countries to handle chemicals safely, and finding new ways to engage stakeholders in Responsible Care. The performance expectations set by ourselves and our stakeholders require significant undertakings, but I am optimistic about further progress during my term as chairman. As I work with the RCLG, I am convinced we have a strong global team of committed individuals and organizations who recognize our opportunities and are ready to move forward. It will be an exciting time and I am pleased to be part of it.

Chuck Walls

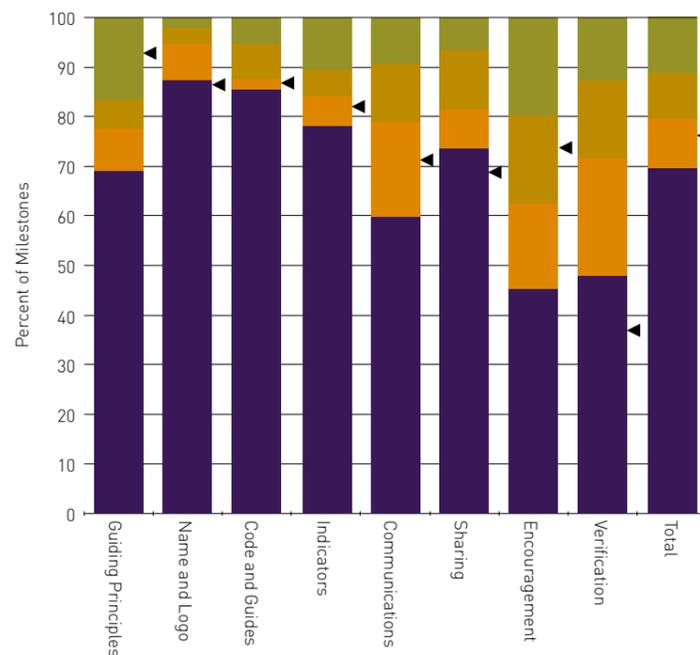
INTERNATIONAL RESPONSIBLE CARE IMPLEMENTATION STATUS

45 OF 45 COUNTRIES BASED ON MARCH 2002 ICCA SURVEY



INTERNATIONAL RESPONSIBLE CARE IMPLEMENTATION STATUS

MATURE PROGRAMS (8+ YEARS). 28 OF 45 COUNTRIES BASED ON MARCH 2002 ICCA SURVEY



■ Element in place/ongoing improvement ■ Implementing Plan ■ Developing Plan ■ Initiating

◀ Arrow shows level of compliance at previous assessments

Implementation

Each national association signed up to Responsible Care is required to make an annual report to show its progress in implementing Responsible Care. The basis for these reports is the eight fundamental features (see Appendix 1) that have been expanded into thirty "milestones" to create a thorough and comprehensive progress check.

These milestones were slightly changed since our previous status report. For example, the question "Is Responsible Care a condition of federation membership?" was introduced into the "Guiding Principles" assessment; the heavy weighting of "Codes" was reduced from 11 to 6 questions and the weighting of "Indicators" increased from 2 to 6 questions to improve the balance of these key parameters; and under "Encouragement" a process for dealing with persistent poor performers was called for. The progress of national associations against each milestone is rated according to four implementation status levels:

- A. Initiating
- B. Developing plan
- C. Implementing plan
- D. Elements (milestone) in place and ongoing improvement

The survey results are summarized in the table on page 9 and in the two graphs opposite that show the implementation status percentages for each fundamental feature. The first graph shows progress in the 45 countries in membership in early 2002, many of which have started with Responsible Care fairly recently. The second shows the status in the 28 countries with "mature" programmes that were started eight or more years ago. At the time of our last report in 2000 there were only 14 in this "mature" group, and only seven in 1998.

Israel has not been included in the survey as it only adopted Responsible Care in August 2001.

Highlights

Worldwide some 63% of the total 30 elements of the eight fundamental features of Responsible Care have been implemented (level D), compared with 58% in 1999. A further 23% are at the developing and implementing stages, (levels B and C). Implementation has improved worldwide for each fundamental feature with the exception of "Guiding Principles" and "Encouragement": the lower scores in these categories reflect the challenge of the additional questions introduced.

For the expanded subgroup of 28 countries with mature programmes, 70% of the elements have been implemented, level D, and work is in progress, at level B and C, on a further 20%. This compares with the status in 1999 when 14 countries had achieved 77% implementation, and 12% were at level B and C. This result represents a reasonable degree of progress for a group which has doubled in size, especially in view of the more stringent tests introduced since last time.

Out of the 45 countries surveyed, 33 countries have published all the required codes/guidelines for implementation, with Product Stewardship codes completed in 33 and Process Safety completed in 40 countries. Twenty-six federations are reporting on a full range of performance indicators such as employees' health, emissions, incidents and injuries and are making these indicators public and discussing them with interested parties, whilst 39 are reporting on employee safety; 24 countries have established effective

stakeholder dialogue and 26 countries have in place peer support and information sharing processes. All countries still have significant potential for continued improvement in the area of verification. This process is being led by the mature countries and their scores on the implementation of self-assessment has now reached 82 %.

Worldwide the Responsible Care initiative will benefit from increased focus on communication with interested parties and on encouragement/sanctions for participating companies. The survey of individual countries' implementation is already being used internally for benchmarking and to identify countries which would benefit from the help that the RCLG's membership support subgroup can provide. It will also help identify those countries where the ICCA/RCLG requires more information to demonstrate a continuous improvement in implementation and thus qualify for ongoing membership of Responsible Care.

Table 1
2001 Implementation Self Assessment

MILESTONE	Implementation Status				
	No. of countries	Initiating A	Developing Plan B	Implementing Plan C	Element in place/ongoing D
1 Guiding Principles					
(a) Guiding Principles agreed and published	45	0	0	1	44
(b) Guiding Principles signed by over 80% of members	45	2	4	11	28
(c) Responsible Care is a condition of federation membership	45	20	7	3	15
2 Name and Logo					
(a) Responsible Care name and logo registered & rules obeyed	45	3	0	4	38
(b) Regular use in publications by the association and member companies	45	0	5	3	37
3 Code and Guides					
(a) Community Awareness/Emergency Response	45	2	4	2	37
(b) Employee Health and Safety at Work	45	3	2	1	39
(c) Process Safety	45	0	3	2	40
(d) Protection of the Environment/Waste Reduction	45	2	3	1	39
(e) Safe warehousing & Distribution	45	5	4	2	34
(f) Product Stewardship	45	8	4	0	33
4 Indicators: Initial Reporting Agreed and member reporting begun for					
(a) Safety	45	0	2	4	39
(b) Health	45	2	4	4	35
(c) Environment	45	0	2	5	38
4 Indicators: Made public and discussed with interested parties for					
(a) Safety	45	6	6	4	29
(b) Health	45	8	6	5	26
(c) Environment	45	6	5	5	29
5 Communications with Interested Parties					
(a) Mechanism established to obtain input on issues/concerns from interested external parties	45	4	6	11	24
(b) Local consultation/liaison developed by & with member companies: Open days	45	4	4	12	25
(c) Internal/external surveys of Responsible Care awareness conducted and made public	45	15	8	8	14
6 Sharing between Companies/Associations					
(a) Regular meeting programs commenced for both Senior executives and Co-ordinators. Cells	45	2	2	4	37
(b) Regular newsletter or equivalent published.	45	2	5	3	35
(c) Association actively seeking Responsible Care partnership arrangements with other industry sectors	45	9	11	5	20
(d) Association providing (and / or seeking) active support or sponsorship to other country associations	45	8	6	5	26
7 Encouragement					
(a) Performance indicators monitored for both high and low performers	45	10	9	6	20
(b) Mechanisms in place to recognise high performers and to assist less advanced companies	45	10	8	8	19
(c) Process for dealing with persistent poor performers in place	45	16	12	4	13
8 Verification					
(a) Internal self-assessment of codes or other requirements carried out	45	4	3	5	33
(b) Verification results used to continually improve implementation	45	5	13	12	15
(c) Verification results communicated to interested parties	45	12	15	6	12

Responsible Care in Action

In this section we highlight just a small selection of the many success stories recorded from Responsible Care activities across the world. These examples are intended to provide an idea of the global scope of the initiative, and show how Responsible Care has spread out beyond chemical manufacturers and their trade associations.

They illustrate how the Fundamental Features of Responsible Care are being put into practice and show how Responsible Care is not just about performance improvement, but how it is developing into an increasingly powerful ethic that is helping reshape the global chemical industry for the future.

Examples of how the initiative has spread up and down the supply chain reflect the increasing reach of Responsible Care, as partner companies and associations recognise the benefits it brings, and want to share those benefits.

Responsible Care and Sustainable Development

• ICCA report for World Summit on Sustainable Development

As part of its preparations for the World Summit on Sustainable Development in Johannesburg, South Africa, the International Council of Chemical Associations drew up an 83-page document, 'Industry as a partner for sustainable development.' Developed through a multi-stakeholder process facilitated by UNEP the report gives a detailed and forthright account of the industry's progress against sustainability goals since the Rio UN Conference of 1992, sets targets for the future, and highlights the challenges that lie ahead. External stakeholders providing input into the report included representatives from NGOs, labour unions, research institutes and national governments.

• Revisiting Responsible Care Guiding Principles

In the past few years, a number of national chemi-

cal associations have revised their Responsible Care Guiding Principles in order to incorporate elements of sustainable development. These include the associations in Canada, the US, the UK and Australia. Earlier this year, Brazil's ABIQUIM established a special task-force to see how its Responsible Care initiative could be expanded to encompass the social element of sustainable development.

• Triple bottom line reporting

In New Zealand, the government has undertaken a 12-month pilot study of 'triple bottom line reporting'. The pilot scheme, which involves member companies of the New Zealand Chemical Industry Council, will help to determine the criteria to be used. Once agreed, these requirements will be incorporated in NZCIC's PRINCE accreditation scheme.

Capacity building/Training programmes

• Industry resources for APELL

The UNEP programme, Awareness and Preparedness for Emergencies at Local Level (APELL), aims to prevent technological accidents and reduce their impacts by assisting decision makers and technical personnel to increase community awareness of hazardous installations, and to prepare response plans in case of an emergency. The chemical industry provides direct support for APELL from the ICCA and Cefic, the national associations of the US, Canada, and Japan, and a number of large international corporations including Dow Chemical, Shell, Nalco, OxyChem, DuPont and Rhodia. The industry also provides training and expertise.

• Responsible Care in EU candidate countries

Cefic's CHEMFED project, with funding from the European Union, aims to boost the CEEC Federations' organisational strength and capacity to support and represent chemical companies. The programme specifically includes development of the Responsible

Care initiative in chemical associations and their member companies in Central and Eastern Europe and plays an important part in aligning the CEEC industry to EU best practices. Extensive training and awareness programmes are being implemented through Cefic and four national federations – from Finland, Sweden, France and Germany – with the nine federations from the EU candidate countries.

• Emergency Response in China

Through its presence in Hong Kong and China, the Association of International Chemical Manufacturers is promoting the Responsible Care ethic in China. The AICM emergency response committee is working with the government's National Registration Center for Chemicals on transportation emergency response and has developed a protocol to support the improvement of emergency response information nationwide in the event of a transportation incident. The aim is to try and prevent such incidents, and to establish the means to respond promptly when they do occur.

• Joint seminars in India

India's Responsible Care Coordinators Group has been promoting awareness of Responsible Care outside the chemicals sector through joint seminars, workshops and training programmes with the Bombay Chamber of Commerce and Industry's HSE sub-committee. These included safety seminars for the construction and waste management sectors. The Dyestuff Manufacturers Association is working with the RCCG to familiarise its member companies with Responsible Care.

• KN-RCI works with Indonesian government on regulatory compliance

Indonesia's Responsible Care committee, KN-RCI, has set up a network with the government to ensure that regulations aimed at achieving the best practical approach to sustainable development are adhered to. The network involves companies, associations, and government authorities. Joint consultations, seminars and workshops have been held since early 2000 and help ensure industry's continuous improvement in regulatory compliance, and to exceed legislative targets.

• JSR Corp training programme

JSR Corporation started its environmental and safe-



ty training programme for technicians in developing countries in 1992 in co-operation with the International Centre for Environmental Technology Transfer (ICETT), a joint initiative covering industry, academia, and government to promote the smooth transfer of Japan's environmental conservation system. Over 400 technicians have completed this programme which includes air pollution control, water management, industrial waste treatment, odour control, environmental management systems and Responsible Care.

Mutual assistance/experience sharing

• ICCA peer review process

Three years ago the ICCA's Responsible Care Leadership Group launched a Peer Review process at its annual meeting. By end 2002, 15 associations will have been through reviews of their Responsible Care initiative. Presentations to the Group by each association are followed by a rigorous question and answer period designed to pinpoint strengths and weaknesses and identify any areas where help is needed. The main aim of peer reviews, which are intended to involve external stakeholders whenever possible, is to help associations improve, share successes and challenges, strengthen the initiative globally, and enhance visibility and credibility – both internal and external.

• Strengthening Responsible Care in Asia

One of the Japan Responsible Care Council's strategic goals is to strengthen the initiative in Asia by encouraging Responsible Care implementation in Japanese-Asean joint venture companies and in the Asian subsidiaries of Japanese companies. At association level, the Council is working closely with the Federation of Thai Industries on environmental issues. In the spring of 2001 JRCC experts were sent to evaluate the status of Responsible Care in Thailand.

Evaluations and recommendations were offered after visits to and interviews with policy makers, company leaders and seven companies.

- **Global experience-sharing initiatives**

Eleven Spanish- and Portuguese-speaking associations from Europe and the Americas regularly share experiences and best practices, and have established a global database on Responsible Care. French association UIC has been an active participant in Responsible Care events organised by the Moroccan chemical association for its members. With French as a common language, UIC shared its experience of practical implementation of Responsible Care, HSE management systems, and implementing product stewardship.

- **UIC programme to help SMEs**

The French association, UIC, initiated an awareness programme for small and medium sized enterprises (SMEs) in 1999 to help them adopt Responsible Care with assistance from larger companies and retired industry experts. In 2000 and 2001, around 80 SME sites participated with very positive results as the approach provides straightforward solutions to actual HSE problems – in other words, it makes Responsible Care practical and practicable. Interregional meetings, including potential SME candidates, provide an opportunity to share lessons learned through the programme, which is ongoing.

- **Mentoring new applicants**

When a country applies to join Responsible Care, neighbouring countries are nominated as mentors to assist the new association in getting up to speed by offering advice, speakers, guidance literature and examples of local initiatives. In the case of Israeli Chemical, Pharmaceutical and Environmental Society – the most recent to sign up – European association Cefic gave advice and assistance on development of a programme of events for Israel to promote awareness among member companies, and address issues such as codes development and implementation.

- **Chile and Korea benefit from Canada's experience**

Canadian pioneers drafted the first Responsible Care Guiding Principles in 1980, laying the foundations for the chemical industry's global voluntary initiative. The Canadian Chemical Producers' Association continues to use its experience to encourage and help

other countries. Recent examples include giving a major teach-in on verification at the annual Chilean Responsible Care conference, and providing a comprehensive report for the Korean Responsible Care newsletter on how the initiative has shaped Canadian industry over the past 20 years.

- **Mutual aid agreement in Singapore**

In 2000, a number of companies based on Singapore's industrial Jurong Island signed a mutual aid agreement. The group, mainly chemical manufacturers, have agreed to pool resources in the event of an incident involving a hazardous materials spill or fire, for example. The group also meets regularly to discuss health, safety and environmental issues, and share information and experiences. The Sakra Mutual Aid agreement involves ten members and was successfully tested in a joint chemical emergency exercise in February 2002.

- **ExxonMobil shares environmental risk assessment system**

A risk assessment system developed by ExxonMobil employees provides a comprehensive analysis of environmental hazards by using the methodology of safety risk analysis and applying it to the prevention of environmental incidents. After running the system at the company's Fife ethylene plant in Scotland, effluent-related incidents dropped to zero. The company has shared details of the scheme with the UK's Institution of Chemical Engineers, the Scottish Environment Protection Agency, and others.

- **Akros Chemicals experience-sharing at all levels**

Experience-sharing is encouraged at the Eccles, UK, site of Akros Chemicals, and takes place at various levels: Through active participation in the local Responsible Care 'cell' group of chemical firms, through national Chemical Industry Association committees, national and international HSE bodies, and partnerships with the community. Akros and its parent Akzo Nobel also share experience on safety through involvement in groups under the aegis of the European Process Safety Centre. Learning through incident investigation is given high profile and all 'near misses' (360 in 1999 and 657 in 2000) are recorded and investigated. Akros's LTI accident rate has been bettered year on year from 1996 to 2001, when, for the first time, it managed a full year with no LTIs.

Chemicals management: Supply chain/Product stewardship

- **ICCA works on new 'safe use' initiative**

ICCA is in the early stages of developing and implementing a new initiative aiming to ensure the safe use of chemicals by providing a 'knowledge base' of hazard, use, exposure information, and risk characterisation on chemicals in commerce, and make public an appropriate summary of that information. Companies would screen information against agreed criteria for setting priorities, and then conduct additional activities, including further testing based on a tiered use- and exposure-driven approach. The initiative will be implemented at regional/national level with further development through 2002.

- **New Zealand first to implement GHS**

New Zealand's new hazardous substances management system, developed in conjunction with the NZCIC, is the first known example of implementing the Global Harmonisation System for the classification and labelling of chemicals, as identified under Agenda 21.

- **CIA's PSGO system**

The UK Chemical Industries Association has developed an interactive internet service called Product Stewardship Guidance Online (PSGO), with major input from BP Chemicals. The system has proved a useful practical tool for chemical firms, particularly middle sized companies, to implement product stewardship initiatives throughout their supply chain facilitating legal compliance and promoting best practice. It is a 'living document' that can be added to and developed. A number of countries have expressed an interest in the system, and Cefic is working on development of a pan-European version of PSGO.

- **Close cooperation with German distributors**

German chemicals and chemical distribution associations, VCI and VCH, celebrated a five-year Responsible Care partnership in 2001. Each year they review the status of Responsible Care implementation in their member companies and check for conformity of their programmes, and encourage continuous improvement in safety, health and environment protection, irrespective of legal requirements. Companies participating in the VCH initiative represent around 80% of German chemical trade turnover.

- **UK Product Stewardship Accord**

The Chemical Industries Association and the British Chemical Distributors & Traders Association signed an Accord on product stewardship in November 2001. Developed by BCDTA, the Accord offers guidance on the sharing of product responsibilities between suppliers and their distributors. It sets out the responsibilities of both parties in areas of mutual concern and Responsible Care, and is divided into sections covering all areas of operation, from authority to sell the product, through packaging, classification and labelling for supply and transport, handling, safety data sheets, product and packaging disposal and so on. The Accord will provide the model for their respective European counterparts – Cefic and the European Distributors Association, FECC – due for signing during 2002.

- **European distributors adopt Responsible Care**

During the last three years the 16 national associations belonging to the European chemical distributors association, FECC, have individually agreed to Responsible Care partnerships with their national chemical-manufacturing counterparts. The distributors associations are at different stages of implementing their Responsible Care programmes, which are voluntary for the majority, but there is a concerted drive within the FECC to make Responsible Care membership mandatory for all. FECC has also developed a common document for indices of performance that will provide an overview of the members' safety, health and environmental performance and will enable members to benchmark against the norm within each country.

- **Safety and Quality Assessment for service providers**

Responsible Care is extended to logistic services providers through a programme of 'packages' called Safety and Quality Assessment Systems (SQAS), each related to a particular transport mode or logistic operation. SQAS packages exist for the following transport modes and logistic operations: Road, Rail, Distributors, Cleaning Stations, Marine Bulk, Marine Packed Cargo and Marine Terminals. SQAS enables chemical companies to have the quality and safety management systems of their logistic service providers assessed in a uniform manner, thereby avoiding multiple assessments by individual chemical companies. The whole system is in the process of a major upgrade with improvements to the first pack-

age, SQAS Road, completed in early 2002. Other associations – in South Africa, Brazil and Asia Pacific – are also adopting SQAS to enhance their product stewardship efforts.

- **Working with Europe's electronics sector**

In partnership with four European associations covering the electronics sector, Cefic and a number of affiliate groups pooled efforts to assess the safety of chemicals used in electric and electronic equipment. Together, the associations have produced guidance documents covering relevant legislation, product properties and assessments. The actions have enabled Cefic to allay concern about certain products through a process of dialogue and cooperation under its product stewardship efforts, and effectively address the problem of product 'blacklisting'.

- **Canadian agreement with AET**

The Canadian Chemical Producers' Association and the Alliance for Environmental Technology (AET) reached agreement in December 2001 for AET to become 'A Responsible Care Supporting Association.' AET is an international association of chemical manufacturers whose mission is to communicate, foster, and promote the environmental, economic, scientific, and technical benefits resulting from the responsible production and use of sodium chlorate and chlorine dioxide in bleached pulp manufacturing. The agreement furthers CCPA's initiative to extend Responsible Care to other industries and their associations, while simultaneously enhancing AET's ability to fulfill its new and expanded mission.

- **Improving Safety Data Sheets with Asian authorities**

In Asia, chemical industry associations have worked with governments on the use of material safety data sheets, MSDS, to supply information to the users of



chemicals. In China, Hong Kong-based chemical association AICM, has cooperated with the regulatory authorities to develop the regulation of, and supported translation of, the common elements of an MSDS to ensure commonality of language.

- **Responsible Care makes progress in the Philippines**

Philippine chemicals association SPIK has secured a commitment to Responsible Care implementation from over half its member companies, including eight chemical traders. A government agency, the Environmental Management Bureau, has invited SPIK to talk about Responsible Care at a number of seminars involving key regional personnel and industry representatives. SPIK has also secured funding from the Japan Economic and Trade Organisation (Jetro) for its Responsible Care initiative that will help it carry out various activities planned for 2002.

- **PRTR programme in Japan**

The Japan Chemical Industry Association prepared and published a manual for the management of chemicals emissions and results reporting in 2000 to help ensure national objectives under the PRTR (Pollutant Release and Transfer Register) are met. Intended for use mainly by SMEs, the manual embodies product stewardship principles that the chemical industry abides by. During the same year, JCIA held 25 seminars reaching 5000 people, not only JCIA member companies but also non-members from the chemical sector, and companies belonging to other industries. A further 2000 people were expected to take part in the 2001 series of PRTR seminars.

- **Malaysia institute benefits from JCIA expertise**

Leading Malaysian research institute, SIRIM (the Standards and Industrial Research Institute of Malaysia) has been visited annually for the past three years by a risk management expert sent by the Japan Chemical Industry Association under a 4-year programme called Risk Management of Hazardous Chemical Substances. Seminars are held on the methods and processes of risk assessment of chemical substances and problems discussed in conducting risk assessment for risk-based decision-making. The programme is carried out under the auspices of the Japan International Co-operation Agency.

- **Audit protocol for drum-reconditioning firms in South Africa**

In South Africa, large empty containers are in high demand, particularly for water storage. The Chemical and Allied Industries Association (CAIA) is preparing an audit protocol that will be used to certify all firms who recondition drums for the chemical industry. CAIA is including the requirement that Responsible Care signatories only use the services of drum reconditioners that have been successfully evaluated against this protocol. CAIA's main objective is to improve the quality of drum reconditioning services and to prevent contaminated drums reaching the public. Drum reconditioners have been invited to become Responsible Care signatories and members of CAIA.

- **Akzo Nobel Product Stewardship management system**

By the end of 2003, all Akzo Nobel business units are required to have developed a product stewardship management system under a corporate-wide Board directive. Developments include the assessing of quality, health, safety and environmental management of raw material suppliers. The catalysts business, for example, is finalizing development of a monitoring system for this purpose. It has developed joint ventures with customers to ensure proper recycling of waste products to close the lifecycle by effectively leasing out rather than selling products. Work at the research and development stage is also important, and Akzo Nobel has developed an 'early warning' document to be used as part of the project.

- **DuPont Colombia's partnership with TMG**

In 1998, DuPont Colombia contracted Transportes Multigranel (TMG) as its integral logistics supplier, after first carrying out an audit on TMG to ensure it complied with hazardous materials management, and with national transportation standards and regulations. The companies work together on a continuous basis with DuPont periodically training TMG personnel and conducting risk assessments. Regular safety audits are made of TMG's warehouses. Should there be an incident involving DuPont products, the transport firm has a continuous on-line connection also used to indicate distribution status on consignments. DuPont's interaction and permanent communication with TMG on safety issues was a direct result of the transport company's decision to adopt Responsible Care in October 2000.

- **Atofina – Product Stewardship at development stage**

Atofina's product stewardship efforts have produced an effective risk assessment approach for development of new solvents based on four categories: hazard toxicity, ecotoxicity, flammability, and environmental burden. First, it extensively screens the characteristics of HSE hazards using different criteria and then applies a scoring system to each criteria, each one having a different relative value weighted by a coefficient. Comparative results between substances can be obtained. Atofina's approach has already obtained positive results, including creation of a range of solvent-based formulations for paint stripping.

- **CropLife's safe disposal of pesticides and recycling**

Companies represented by CropLife International have collaborated with donor agencies from Denmark, Germany, The Netherlands, Switzerland and the US to achieve safe disposal of government-owned obsolete crop protection products from a number of developing countries. Up to June 2001, CropLife International companies contributed to the disposal of over 3,000 tonnes of obsolete pesticides in over ten countries, including 800 tonnes classified as Persistent Organic Pollutants (POPs). CropLife International member companies no longer produce POPs. In 2000 alone, 1200 tonnes of obsolete pesticides were incinerated in Brazil in a joint government and industry project. Approximately 180 tonnes were also successfully retrieved from Gambia, Madagascar, Pakistan and Uganda. CropLife International stewardship programmes, such as empty crop protection products container management, also illustrate the industry's commitment to promoting environmentally responsible product management. The Latin American Crop Protection Association (LACPA), for example, has organised recycling programmes in Argentina, Brazil, Colombia, Dominican Republic, El Salvador, Guatemala, and Mexico. Programmes first focus on educating farmers so they understand the benefits and procedures involved.

- **Shell Chemicals sets 100% as the target**

A vital element of product stewardship is the generation of data on the hazards and risks that products might pose. Safety data sheets are the principal means of communicating this information. In 2000, 100% of Shell Chemicals marketing operations sup-

plied a safety data sheet with all products sold, 89% supplied the safety data sheets in the principal local language. Shell has set itself a target of 100%. Computer-based systems for the automatic generation of safety data sheets in more than 24 languages have been developed and are being extended to include many more languages.

- **Fujifilm: effective ways with waste**

Fujifilm has developed effective ways of reusing and recycling waste materials. By end 2001, the company had achieved 100% conversion of waste from both raw materials used in production processes and all other waste materials at six sites in Japan. Specific measures being implemented include separation and recovery of waste materials, including chemical products; selection of an appropriate recycling company for each type of waste material; and selecting the optimal method at each point in time for the recycling of sludge, waste solvents, waste plastics, waste oils, waste paper etc.

- **Selling services, not just products at DuPont**

Some leading chemical companies are beginning to sell services rather than kilograms of chemicals so providing greater scope for creativity in finding the most efficient way of fulfilling customers' needs. DuPont, for example, has an arrangement with automaker Ford of Canada to paint the cars itself. DuPont gets paid for the number of cars painted rather than for gallons of paint – an effective incentive to use less paint. Its expertise in paint chemistry enables it to do more with less, saving money for Ford and improving efficiencies for DuPont.

- **Lubrizol – encouraging product stewardship by suppliers**

Programmes devised by Lubrizol's purchasing department are designed to ensure that the company's suppliers are good stewards of the products they sell to Lubrizol. Lubrizol holds an annual Product Stewardship Day to review progress and check the effectiveness of these programmes. One action for 2001 was to invite 10 suppliers not covered by Responsible Care or an equivalent programme to join the American Chemistry Council's Responsible Care Partners scheme. Lubrizol has also developed a rating system for supplier MSDS quality.

- **Safer transportation with Sasol initiative**

At South Africa's Sasol, safe transportation of the company's products is being addressed through management guidelines known as Transcare. Transcare guidelines help ensure that the transportation of chemicals and hazardous materials also considers contracts with service providers and takes into account the concerns of communities through which the products are transported.

- **Shell Chemicals' Customer Relationship Review**

Shell Chemicals shares its substantial knowledge of proper handling with customers through a product stewardship programme that includes responding to safety inquiries and carrying out safety reviews with customers. One product, ethylene oxide (EO), can present a significant risk if not handled properly. The Shell EO/Glycols business tracks how customers rate its product stewardship activity in the Americas by including questions on this aspect of its business in its Customer Relationship Review (CRR) process. The EO/Glycols business recently extended CRR to the Europe/Africa region and has already identified areas to enhance PS support. The CRR process is being extended to the Asia/Pacific region during 2002.

- **Eaglebrook drivers monitor customers**

US carrier firm Eaglebrook Inc has enlisted the aid of its 100 chemical delivery truck drivers to see how customers maintain their storage and transfer sites. Drivers are trained to look at the installations to which they deliver and to spot customer equipment that is deteriorating or incompatible with Eaglebrook's chemicals. Drivers have full authority to report unsafe situations that could lead to a refusal of delivery, if the hazard is felt to be serious enough.

- **FMC's tollers selection process**

FMC uses an on-site toll manufacturer assessment process. After a search identifies potential tollers, various safety reviews are conducted to narrow down the list. The first review is the use of the corporate toller standard checklist, developed on the guiding principles of Responsible Care. When possible, local tollers are selected to enable control and frequent auditing to protect the local community. Safety reviews also include a safety risk assessment following a 'what-if' protocol. The corporate safety team, plant personnel

and the toller are involved in the assessment. An environmental assessment involves an on-site visit to the tolling facility by corporate and local environmental FMC personnel. They conduct an audit with the toller personnel and the impact on the local community is assessed. Waste issues are addressed to ensure cradle-to-grave FMC responsibility. Under management of change, the formal process change consists of notification, which involves the operators, maintenance, and engineers. The final stage is the pre-start-up safety review conducted at the tolling facility involving FMC operators interfacing directly with the toller's operators.

Ethical investment

- **Leaders of the Dow Jones Sustainability Index**

In 1999, leading global financial index provider Dow Jones, in partnership with Swiss firm SAM Sustainable Asset Management, launched the world's first sustainable financial benchmark: the Dow Jones Sustainability Index (DJSI). This index measures the financial performance of companies belonging to the top 10% of companies in terms of corporate sustainability within their sector. As of beginning 2002, Dow Chemical and BASF were considered corporate sustainability leaders in the chemical sector.

What distinguished Dow Chemical as a leader were its eight Sustainable Development Principles that are an integral part of its strategy towards maximizing long-term shareholder value and include: product stewardship, stakeholder partnerships and dialogues, eco-efficiency, eco-system integrity, global "versus" Dow EHS standards, equity and quality of life, employee and public outreach, and transparency.

SAM analysts' research showed BASF has clearly acknowledged sustainable development as a key element of its corporate growth and innovation strategy. The company's corporate governance was extended through the establishment of a sustainability board committee in 2001. BASF further demonstrated its commitment to corporate sustainability by signing the UN Global Compact initiative. One of the company's core competencies is its highly-developed approach towards industrial ecology known as 'Verbund' which focuses on improving eco-efficient production processes.

Degussa's commitment to sustainable development

was recognised with its inclusion in the DJSI 2000. Degussa obtained the highest score of all 236 firms on the index for safety and environmental management. Analysts awarded particularly high marks for the company's responsible attitude to substances like cyanide, particularly its careful and critical approach to screening customers, and the training on cyanide handling provided for customers.

Outreach / Stakeholder dialogue

- **Responsible Care philosophy reduces tension in Thailand**

Samutprakarn Province on the outskirts of Bangkok is home to the highest density of chemical manufacturers in Thailand with over 6,000 factories, mostly SMEs. Acute pollution and transport problems had resulted in a confrontational situation with the local community and the media. The Thailand Environment Institute (TEI), a local NGO, backed by funds from the European Commission, brought together stakeholders – government, media, industry, the community and others – to solve the problems. The Samutprakarn Environment Society (SES) has been established to monitor targets set for both industry and the community. A community advisory panel has also been set up. SES has used the Responsible Care philosophy for guidance and it has already proved an important tool for many manufacturers to achieve their goals.

- **Industry strengthens links with schools in Finland**

Educational outreach efforts in Finland have been particularly successful under the association's Responsible Care initiative. A member of the national chemicals association, KT RY, is committed on a full-time basis to liaise and work with the school authorities. Close links have been established with educators, to the extent that schoolbooks on chemistry feature not only industry achievements, but also the Responsible Care logo which helps improve awareness of the initiative with schoolchildren.

- **Italy's Open Door event**

Around 600 chemical sites have participated in Federchimica's Open Door programme over the past 15 years. The association says the Open Door programme has improved the chemical industry's image by underlining its contribution to the improvement of

safety at work, environmental and health protection, and the quality of life in general. Open Doors 2000 involved 85 sites in 15 of the 20 regions in Italy with information going out to 300,000 people. Federchimica supports the Open Door initiative with operative guidelines including layouts for invitations and posters. Assistance and support for working with the media is provided as well as documentation for distribution during the event such as the national Responsible Care Report.

- **SCIC plans communication forum for Singapore residents**

There is concern by some residents and Singaporean environmentalists groups about the rapid growth of the Singapore chemicals industry over the past few years. It is now the world's third largest refining centre and second largest ethylene producing centre, and growth is set to continue. In response, the Singapore Chemicals Industry Club is considering ways of enhancing communications between the industry and local residents, and has held discussions with the Singapore Minister for Environment. SCIC plans to roll-out a communications programme by the end of 2002 scheduling regular meetings with residents groups, and to open dialogue with environmentalists.

- **Korean outreach efforts**

Since South Korea signed up to Responsible Care in 2000, it has worked hard to increase awareness of the initiative both within industry and with external stakeholders including government, academia and society in general. The Korean Responsible Care Council is publishing a regular newsletter, and has set up a website as part of plans to develop a variety of outreach projects.

- **Educating Canada's future workforce**

Chemical engineering students at universities across Canada are learning about Responsible Care through a lecture that provides an important introduction to entering the industrial workforce in Canada. Its purpose is to provide undergraduates in chemical engineering programmes with an understanding and awareness of the chemical industry's commitment to the initiative. Giving students the opportunity to learn about Responsible Care at an early stage will give them a much better understanding and appreciation of their future responsibility as engineers.

- **BASF to introduce Community Advisory Panels in Asia**

BASF plans to set up community advisory panels (CAPs) at all its major sites in Asia, starting with Yeosu in Korea. The Yeosu CAP will be industry's first such panel in Korea and is in response to local concerns about the rapid expansion of the site. CAP members will include opinion leaders representing local NGOs, academia, the commercial and industrial community, government authorities, and experts in environment, safety and health.

- **Dow's Community Perception Surveys**

Dow has set itself an objective of at least 80% of residents and leaders to agree that the company is a good neighbour and a valuable member of the community in each location where it has a significant presence. Since 1998, Dow locations around the world have incorporated globally comparable questions into their Community Perception Surveys. Each location is responsible for developing and implementing effective action plans based on the survey results. The surveys cover the spectrum of triple bottom line topics ranging from community economic impact, to public health and safety, to contributions spending and hiring practices. The surveys are not only valuable measurement instruments, but also effective stimulants for improvement.

- **Bayer's objectives**

Bayer has established objectives for continuous improvement in all areas of Responsible Care for the coming years. Goals have been set for the Bayer Group worldwide and include evaluation of all relevant Bayer production sites by 2004 by qualified outside auditors. Bayer AG is committed to a 53% cut in emissions by 2010 compared with the base year 1990 and additional efforts are in place to identify further potential for reductions throughout the Group. Under its safety management program, Bayer aims to achieve a further reduction in recordable incidents by 2004, and to reduce work-related injuries and illnesses by 50% by 2004.

- **Incitec Charter for the Community**

Incitec Ltd's Kooragang Island plant and the community group Citizens Against Kooragang Island Abuse (CAKA) won Australia's Plastics and Chemicals Industries Association 2001 Responsible Care

Environment Award for their co-operation on environmental and community issues. It took Incitec nearly three years to develop a charter to formalise an alliance between the industrial plant and the local community. The charter states the company's commitment to the community, community expectations of the company, and the community obligations under the charter. CAKA which represents a community of around 7,000 people, says the community felt safer knowing its voice would be heard and its opinions respected.

- **Safe water for Mensura, Eritrea**

Employees of Norsk Hydro along with trade unions, the environmental organisation Bellona and the Norwegian church have built a waterworks in Mensura, Eritrea. Employees donated 2,000 hours of pay to the project. The waterworks provides safe water to the 4,000 inhabitants of Mensura's two villages and a refugee camp built with aid from the Norwegian church. The project started as a wish to help people in rural Eritrea, but also to demonstrate that polyvinyl products can be useful to society by improving living conditions. About 5,000 metres of polyvinyl pipes supply pure water to various water posts in the villages. The local school and hospital have also received their own water supply.

- **Nexen initiative in Yemen**

Canadian oil and chemicals firm Nexen, through its status as a partner of the Canadian Chemical Producers Association, has 'exported' Responsible Care to Yemen, location for the company's single largest production operation. Nexen has been producing oil from the 'Masila Block' since late 1993 and ensured from the outset that operational policies and practices used in Canada were also employed in Yemen, where the regulatory regime there is still relatively undeveloped. The company has also overcome cultural differences with regard to workplace safety and in recent years, the Yemen operations have achieved the best safety record in the company. Nexen works closely with the government and neighbouring communities to keep them informed of its activities and to assist on issues such as access to clean water, health care and educational support.

- **Part of the community**

The Humber Chemicals Focus (HCF) in the north of England acts as a liaison for a group of nine chemical

companies with two local villages. Community representatives have access to senior management, and meet regularly to discuss a range of issues. Companies operating through HCF have come to value what access to the community can do for them, and now seek to answer concerns before they've even been raised.

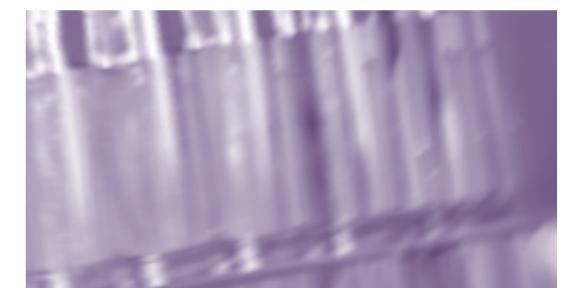
- **First CAP launched in Turkey**

Leading acrylic fibre producer AKSA has established the first community advisory panel in Turkey. Launched in October 2001 the CAP includes 23 representatives from regional NGOs and the authorities. The panel is making recommendations on AKSA projects related to environmental, public health, emergency response preparation and risk management issues. AKSA says it established the panel to 'gain access to the concerns of the community, to exchange ideas and contribute sustainably to regional development.' AKSA's achievement was recognized at the national association's Responsible Care awards.

Health, safety and environment

- **Government signs new Memorandum of Understanding with CCPA**

In February 2002, the governments of Canada, Alberta and Ontario signed a new Memorandum of Understanding (MOU) with the Canadian Chemical Producers' Association. The objective is to prevent and reduce the release of toxic and other chemical substances through voluntary, non-regulatory action. The MOU was developed in cooperation with industry, the Government of Canada, the provinces of Alberta and Ontario who account for over 80% of chemical production in Canada, and environmental NGOs. The agreement, which runs to end 2005, commits the chemical sector to reduce its smog-causing emissions of volatile organic compounds by 63% in Ontario by the



end of 2002. The first MOU between the Government of Canada and CCPA was signed in 1994 and led to significant progress in reducing emissions of toxic substances. Between 1994 and 1998, for example, benzene and butadiene emissions were reduced by more than 50%.

- **Federchimica coordinates environmental plan for Ravenna**

In Ravenna, Italy, a unique agreement was signed in 2000 between various local authorities, the local industry association and 16 businesses, most of them chemical companies. The ultimate purpose of this joint initiative is to achieve EMAS registration for the entire area, following completion of individual companies' certification under ISO 14000. The main objectives of the local authorities are to obtain an overall environmental analysis of the Ravenna chemicals site, improve the environmental quality of the area, and to develop an environmental policy. Italy's national chemicals association Federchimica is acting as a consultant and project coordinator.

- **VNCI exceeds targets of environmental covenant with Government**

The latest Responsible Care report from the Dutch chemicals association VNCI showed that industry has honoured its decade-old environmental covenant with the authorities. Indeed, many of the provisional targets for the period 2000-2010 have also been achieved. The report shows targets for atmospheric discharges were achieved for 25 of the 29 substances listed in the covenant; emissions reductions on 17 of those substances complied with the 2010 targets. Industry made all its targets for 34 named substances emitted to water, with 31 hitting the 2010 target. The NOx reduction targeted for 2000 was reached in 1999. Energy efficiencies over the decade amounted to a 25% improvement, better than the 20% targeted. VNCI has decided to expand the covenant's agenda to include a large number of initiatives in the field of sustainable enterprise.

- **Working with the Government in Chile**

The national chemical association in Chile, ASIQUM, has made good progress in its relations with government agencies thanks to Responsible Care and is directly involved in working groups setting new reg-

ulations. The chemical sector is the first to have been selected to work with government on two voluntary agreements with the theme of cleaner production. It is also working with the authorities to prevent chemical products being diverted for use in the manufacture of illegal drugs, and has voluntarily eliminated harmful ingredients in glue and paint formulations to reduce substance abuse.

- **Contractor safety scheme for Europe**

SHE Checklist Contractors (SCC) is a procedure developed in the Netherlands for the certification of a safety, health and environmental management system for contractors. Contractor safety is a major issue for the chemical industry worldwide. In Europe, for example, statistics show that over 80% of accidents in the chemicals sector involve contractors' employees. SCC is currently in use in the Netherlands, Belgium and Germany and is being considered for use in Switzerland and Austria. Discussions are underway for Cefic to provide a 'European platform' so the checklist becomes standard use throughout Europe.

- **Energy efficiencies**

Nearly 293 JCIA member companies reduced their average unit energy consumption by 7% against the 1990 level, a notable achievement as Japan is highly dependent on imported energy sources, and efficiencies before 1990 were already good. JCIA's goal is to achieve a further 3% reduction by 2010. In Europe, Cefic has committed to reduce specific energy consumption by 30% by 2010 in its Voluntary Energy Efficiency Programme (VEEP). In the USA, ACC members achieved an average annual improvement in energy efficiency of 2.4% from 1992 to 1998, for a total improvement of 13.5%.

- **Raising the bar**

Olin Corp has embraced "The Goal is Zero", an ambitious extension of the Responsible Care process under which the company is striving to achieve zero incidents in four key areas: workplace health and safety incidents; transportation incidents; accidental spills and emissions; and discharges above permitted levels. "The Goal is Zero" highlights the company's commitment to excellence by proclaiming that no amount of workplace safety incidents or environmental incidents is acceptable – a vision requiring daily

vigilance and a commitment to the improvement process embodied in Responsible Care.

- **Safety first at Cytec and Milliken**

Cytec Industries Inc operates a programme called SAFE – safe attitudes from empowerment – under which top management has a personal commitment to health and safety. The company's CEO together with SAFE chairpersons from all locations worldwide review progress towards safety goals, identify opportunities for improvement, and set future targets. Cytec won the ACC's 2000 Responsible Care Employee Health and Safety Code Sustained Excellence Award for SAFE, including its 'exceptional' contractor safety programme. Milliken Chemicals also won an ACC award – the first time a firm from the 'small company' category has been honoured under the scheme. All Milliken employees – from clerical staff, to operators, managers and contractors – are required to participate in annual safety audits.

- **South Africa pilots hazard communication system**

One of the mechanisms used to prevent occupational illness and injury is the use of hazard communication. Successful hazard communication is particularly challenging in countries with a relatively low literacy rate and where traditional hand signals may be confused with some of the hazard signs. Chemical companies in South Africa have participated in pilot testing of a new global hazard communication system in order to identify the ease with which employees recognise the hazard illustrated by a specific pictogram.

- **DuPont slashes CO₂ emissions**

DuPont Fluoroproducts in Dordrecht, the Netherlands, converted a fluorine-containing waste stream, primarily HFC-23, into a new raw material through construction of a special incinerator known as the Thermal Converter. Besides the recovery of a useful raw material, the biggest advantage of the new installation is that the CO₂ equivalent emissions of DuPont in Dordrecht were reduced by no less than 6 megatons as HFC-23 has a very high global warming potential. So DuPont has, on its own, accounted for almost 10% of the total reduction the Netherlands is required to achieve under the Kyoto protocol.

- **Henkel corporate accident database**

Henkel's target is to reduce the number of occupa-

tional accidents in the Group by 25% by 2005 against the base year 2000. Systematic collection and analysis of all accident data plays a crucial role. A corporate accident database was set up in 2001, in which all Henkel companies enter precisely defined information about occupational accidents, operational incidents, and distribution incidents. The data is systematically analyzed to form the basis for targeted improvement and training measures.

- **Improving safety at Dow Corning**

A number of the Responsible Care codes of management practice including employee health and safety, process safety and emergency response helped Dow Corning make its Barry, UK site an even safer place to work. A 'B Safe' behaviour-based safety programme has been initiated for hazard identification, a new electronic 'permit to work' system has been evaluated, and an intranet-based safety management system adopted. Several older processes have been upgraded; and fire protection standards and communications improved. Careful selection and management of suppliers and contractors is enhancing site safety and helping meet product stewardship obligations. Performance benchmarking of product stewardship has helped identify opportunities for improvement.

- **Olin Corp's environmental action in Venezuela**

Olin Corporation has taken leadership in improving the environment in Venezuela's Lake Maracaibo district. A \$1.1 million investment in a joint wastewater treatment system for two plants the company operates on the lake makes them the first in the region to achieve world-class effluent standards. The project is cited as a model for restoration of the lake's environment. Olin has shared its knowledge with the World Bank's International Finance Corporation to help develop the first manufacturing process safety and environmental control criteria for World Bank-funded industrial plants in developing countries.

Implementation Assurance

- **Verification of Responsible Care**

A common stakeholder criticism has been that Responsible Care lacks credibility because there is no independent verification of the initiative. Industry's response has been to develop management systems

for Responsible Care that can be externally verified. The UK, for example, recently introduced such a process while Austria has had third party verification of Responsible Care in place for a number of years. Changes to Responsible Care in the USA include introduction of mandatory verification from 2003. Japan launched a new verification process in 2002, which can be monitored - though not performed - by external stakeholders. Brazil, Chile, Ecuador and South Africa are also developing verification schemes.

- **Third party inspection of distribution companies in Germany**

The German chemical distributors' association, VCH, carries out third party inspections of all members' Responsible Care programmes. First, a company completes a self-assessment questionnaire, the results of which form the basis of actions and goals for the next three-year plan drawn up by the Responsible Care coordinator. The plan is submitted to the third-party expert, together with the annual coordinator's report, for an evaluation of Responsible Care implementation. As well as the evaluation, assistance and advice for future activities is also provided under the system, which aims to verify continuous improvement in all areas of Responsible Care. Audits take place every three years.

Performance Reporting

- **CEFIC pilots occupational illness reporting**

European association Cefic is extending regional reporting activities with the piloting of an occupational illness frequency measurement based on the experiences of multinational chemical companies. The results have been reported at European level for the first time in 2002. The reporting scheme has been researched since early 1999 when Cefic found broad support for the proposal, although amendments were needed to reflect national differences. In February 2001, Cefic issued guidelines to enable companies and federations to provide data in accordance with national schemes or regulations in a harmonized way.

- **PIL website for performance data**

Norwegian industry association PIL has put site-



specific data covering the core parameters of Responsible Care on a single web site, making it easier for companies to carry out benchmarking, and providing a useful tool to track sector averages and trends. The site provides national averages and a range of HSE statistics for PIL's numerous different industry sectors including chemicals. The website also gives the HSE averages for Responsible Care companies. All companies that contribute data have access to a password-protected area containing the site-specific data submitted by other firms in the same sector. Companies are identified by name so it is clear who are the best and the worst performers. Companies that have not submitted the data required under their Responsible Care commitment are highlighted in blue. Plans to make the data available to the general public are under consideration.

- **VNCI's environmental burden approach**

Development of the Environmental Burden (EB) approach, which was pioneered by ICI, began in VNCI in 1999 with the help of a grant from the Dutch environment ministry. The methodology was introduced in 2000. The system offers industry an accurate way to assess the impact of emissions so it can properly target resources to reduce those that are potentially the most harmful. Government, too, is able to use the EB approach to assess whether it is sensible to regulate on certain emissions or not. Using the EB approach to measure, manage and reduce the environmental impact of the chemical industry's activities in the Netherlands has proved so successful that the Dutch chemicals association VNCI translated its guidance into English to enable it to be applied on a global basis.

Performance Reporting

Since openness is a vital part of Responsible Care, the communication of performance improvement to customers, suppliers, local communities, regulators, employees, shareholders and the general public is a prime requirement.

In order to monitor, benchmark and communicate the achievements of the chemical industry at local, national, regional and global level, the industry needs a comprehensive assessment of its HSE performance, based upon common definitions. Agreement on a core set of quantitative Indicators of Performance is the first step in achieving this objective. In Europe, such a sector-specific system of Indicators was developed by CEFIC in 1998.

At global level, the ICCA Responsible Care Leadership Group agreed, at its 2001 annual meeting in Mexico City, to present in this status report the first ICCA performance indicators, country by country. It was also agreed to gradually add further parameters in future years.

As the first industry to embark on global performance reporting, the data presented in this chapter is still somewhat fragmented. It has been compiled by ICCA, but has not been through any formal review process at ICCA level. We need, for example, to improve on achieving common definitions.

The Indicators chosen for this report, covering the years 1999 and 2000, were:

Safety:

- Number of fatalities
- Lost Time Injury Rate (number of lost time accidents per million working hours).

Environment:

- Emissions to air: Sulphur dioxide (SO₂). Expressed as tonnes of SO₂.
- Discharges to water: Chemical Oxygen Demand (COD). Expressed as tonnes of Oxygen.

Reference parameter:

- Number of employees in the Responsible Care companies reporting.

First and foremost, we have not been able to collect a complete set of data, but we have made a useful start. The detailed results, with the exception of fatalities, are given in the table in Appendix 5: they cover a total number of employees of around 2.1 million. For various rea-

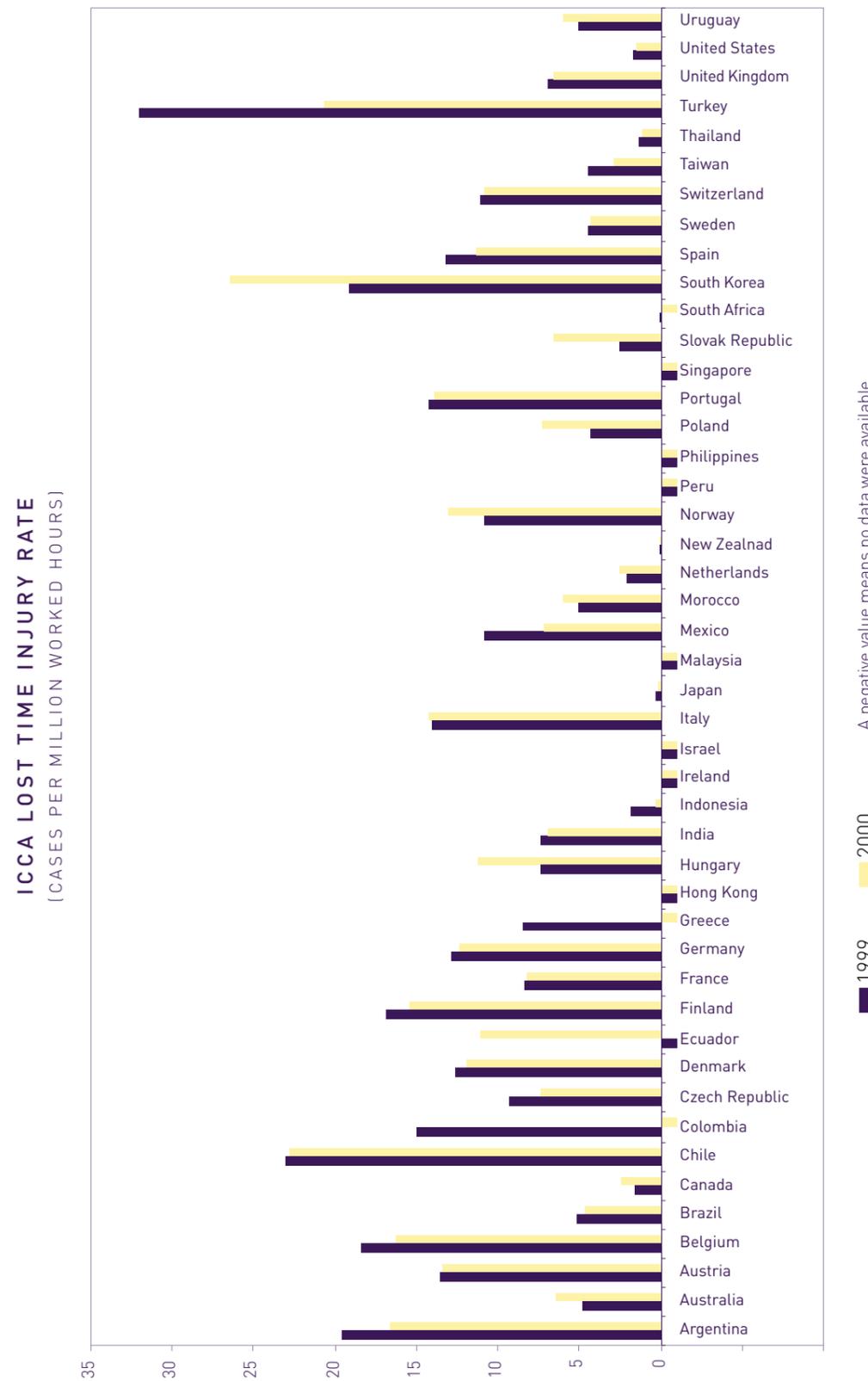
sons there are some countries that were not able to report the indicators in the units requested, and for several national associations this is the first time they have undertaken data collection on this scale. We will continue to encourage all associations to report for the upcoming years and to improve the quality of their reporting - a process which, amongst other things, will promote sharing of best practice in the spirit of Responsible Care.

Fatalities Unfortunately in 1999, 43 fatal accidents were reported in the 35 countries that submitted data to the ICCA. Sadly the figure for 2000 was worse: there were 59 fatal accidents with the same number of countries reporting. Whilst these are better than the statistics for 1998, when there were 70 fatal accidents (28 countries reporting), they are clearly not acceptable. The ICCA objective has to be zero fatalities.

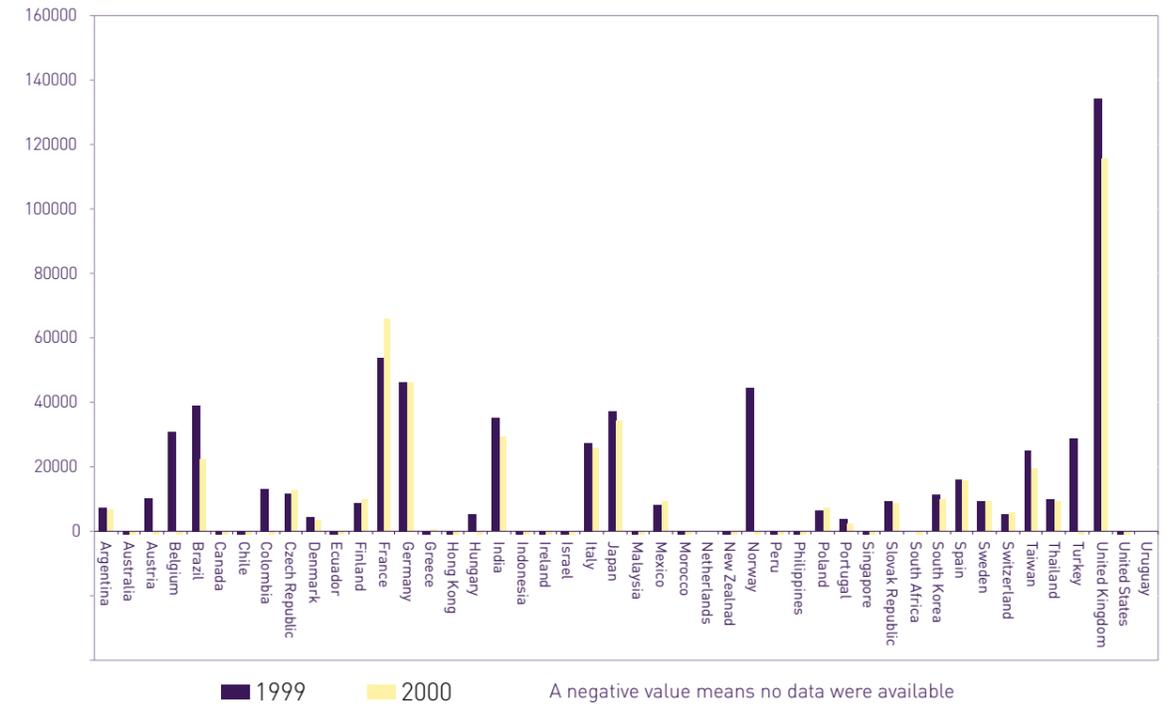
Lost Time Injury Rate (LTIR) Whilst this safety indicator is nominally the most well-known of all HSE indicators, the differences in culture and legislation in the different countries do not allow a full comparison between the figures: different countries do use different criteria. From the LTIR chart where 35 countries reported data for 1999 and 2000, there is clearly a very wide range of safety performance, with considerable scope for improvement. The ICCA must learn from best-in-class federations and best-in-class companies.

Environment Although it is not possible to compare the emissions to air or the discharges to water between countries since it depends on the type of chemical installation, the total production and many other factors, it is possible to compare the trend in each country. We can see that in almost all countries the emissions are decreasing.

Companies and federations are encouraged to collect data and publish their own reports taking into account the defined and agreed core parameters, adding other parameters to reflect national or local concerns. Many national federations' annual Responsible Care reports detail health, safety and environmental performance. More information can be found in Appendix 4 of this report.

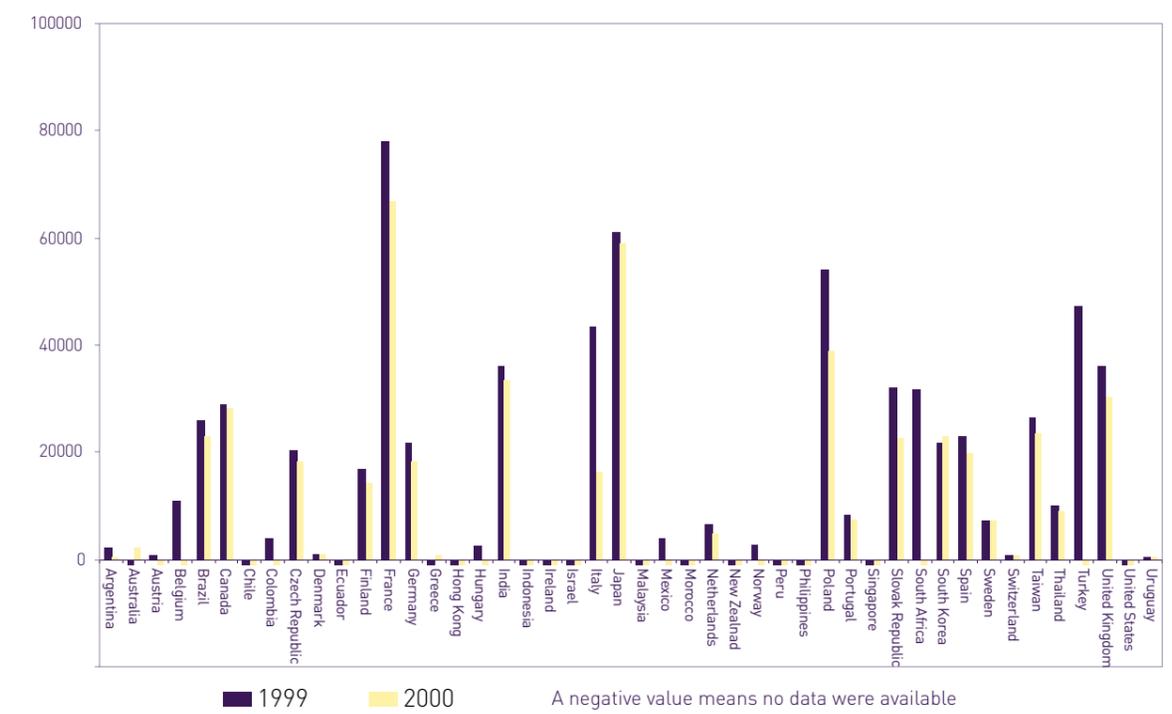


CHEMICAL OXYGEN DEMAND (TONNES OF O₂)



A negative value means no data were available

SO₂ RELEASES (TONNES)



A negative value means no data were available

Voluntary Action on Products

In recent years, the global chemical industry has responded positively to increasing public concern about the perceived adverse effects of chemicals on human health and the environment. Rising public expectations about safer workplaces, reduced emissions, waste reduction, and avoiding adverse environmental effects mean stakeholders want to know more about the possible risks associated with chemical products and be assured they are being transported, used and disposed of safely.

Three voluntary ICCA programs, arising from both the obligations and spirit of Responsible Care, demonstrate the global chemical industry's commitment to addressing these public concerns: Product Stewardship, the Long-range Research Initiative, and the High Production Volume Chemicals initiative.

High Production Volume (HPV) Chemicals

The ICCA launched its High Production Volume (HPV) Chemicals initiative in 1998. Under that initiative, industry has set a goal of providing for OECD assessment harmonized hazard data sets and a draft initial hazard assessment for approximately 1,000 global HPV chemicals by 2004. An initial "working list" of candidate chemicals for possible inclusion in the initiative was selected because of high production volume of a chemical in at least two OECD member countries, or otherwise of interest in two regions (EU, North America, Japan). Priority will be on substances of high concern (e.g., for chemicals with wide dispersive uses or the potential for extensive human exposure.)

The OECD's Screening Information Data Sets (SIDS) program includes information on physical/chemical characteristics, environmental fate and pathway, ecotoxicity and human toxicity endpoints. By providing data on each of these endpoints, the ICCA initiative will enable the completion of an initial hazard assessment on sponsored chemicals. The initiative also will make OECD-like hazard assessments available on a significant portion of global HPV chemicals much sooner than would otherwise have been possible.

HPV chemical producers in the United States, Europe

and Japan have joined forces to "sponsor" chemicals of interest to them. Sponsorship involves the systematic collection of all valid, relevant existing data, generating new data where necessary, and drafting the initial assessment reports. In this way, sponsors avoid unnecessary animal testing as well as duplication of national efforts.

The ICCA has established a web-based tracking system to identify both the companies involved in the program, the chemicals they have agreed to sponsor, and the progress against those commitments. Soon, industry hopes to link directly to the data made available from work completed under the program.

Industry also has volunteered to provide information on HPV chemicals in other venues. Early lessons from those programs include: (1) more data exist on HPV chemicals than previously estimated; and (2) a relatively small amount of new testing is needed in order to complete the SIDS data set. For example, in the US HPV Challenge Program companies have volunteered to provide SIDS-level hazard data and test plans for roughly 1,400 HPV chemicals in addition to their ICCA commitments. In that program, SIDS data already are available, summarized and posted on the US EPA web site for more than 800 HPV chemicals. And while there are several possible animal tests per chemical, only 161 new tests have been proposed as necessary to complete the data sets.

And in the ICCA initiative, to date nearly 800 global HPV chemicals have been identified by companies and are being "sponsored" for assessment. By the end of this year, nearly 130 of those chemicals will have completed their initial assessments, and another 100 or so are in "advanced discussions" with sponsor countries. Industry is working hard to complete the data packages and draft the initial assessments by 2004, although the pace at which the ICCA chemicals are assessed by governments is not within industry's control. Nevertheless, the ICCA initiative is already a highly successful program, and it is providing information necessary for improving chemical assessments, decision-making and risk management.

The Long-range Research Initiative

Through the Long-range Research Initiative (LRI), initiated in 1999, the chemical industry sponsors research that will be publicly available and increase scientific knowledge of the potential impacts that chemicals may have on human health, wildlife populations, and the environment. Such knowledge will provide valuable assistance to governments in making risk assessment judgments about the potential impacts of chemicals, and more certainty regarding those impacts for the public and manufacturers of those chemicals.

The ICCA provides global coordination of the LRI. Together, the LRI sponsors – the American Chemistry Council, European Chemical Industry Council, and the Japan Chemical Industry Association – provide approximately US\$34 million.

LRI Goals The goals of the chemical industry's international LRI are to:

- Extend knowledge worldwide on the health, safety and environmental effects of the chemical industry's products and processes;
- Support informed decision-making by providing the scientific data and understanding that are the foundation of good public policy decisions;
- Develop new tools to promote the safe use of chemicals, especially as new questions emerge about the health and environmental effects of chemicals; and,
- Coordinate research of ICCA member associations to achieve international scientific participation in the research process and to create synergy among the research projects.

Areas of Research Three broad areas of inquiry, rather than chemical-specific testing, frame the research strategy for the LRI and encourage strategic, multi-disciplinary approaches. For example, a number of scientific disciplines are brought to bear on increasing understanding of the global endocrine issue, as well as providing science to support issues related to the European Union's White Paper on Chemicals.

- Improved methods: to evaluate potential risks of chemicals to public health and the environment, with attention to more reliable and interpretable test methods for dose-response effects, more cost-effective human exposure methods, and better risk assessment methods;
- Susceptible populations: identification of groups that may be vulnerable (including children) and characterization of factors that may place them at higher risk; and

- Chemicals in the environment: understanding how chemicals move and change along pathways from sources to humans and wildlife.

Research Conduct and Publication Research is performed by third-party investigators who remain independent and are responsible for the design and conduct of the research project, the interpretation of the results, and its publication in peer-reviewed literature.

Product Stewardship

Product stewardship is the responsible and ethical management of the health, safety and environmental aspects of a product throughout its total life cycle. The global chemical industry's product stewardship initiatives ensure the successful management of products from manufacture through packaging, distribution, transport and use, to ultimate disposal. This involves establishing formal partnerships with stakeholders and carrying out effective education and training to strengthen links with suppliers, distributors and users, thus ensuring product stewardship extends throughout the supply chain.

- As an example, the International Council of Chemical Trade Associations (ICCTA) represents chemical distributors in over 20 countries worldwide. A memorandum on Responsible Care signed by ICCA and ICCTA ensures this key component of the supply chain is helping its members to strengthen product stewardship efforts.
- Discussions with the International Paint and Printing Ink Council (IPPIC) are looking at how the two organizations can work more closely together. Last year, ICCA and IPPIC agreed that the safe manufacture, distribution, disposal, handling and use of paint and coatings, as well as their chemical raw materials, is paramount. Coatings Care programmes, modeled on Responsible Care, are being implemented in the US, Canada, Mexico, UK, France, Netherlands, Japan, Australia, New Zealand, Malaysia and Brazil.
- Many national chemical industry associations have also established partnership agreements with national associations of chemical distribution and trade. Others have established Partnership programmes within their own Responsible Care initiative to enable non-manufacturing companies like storage and distribution firms to participate as full or associate members. In this way, the supply chain is encompassed directly in Responsible Care.

Future Challenges

Although the chemical industry is proud of its Responsible Care achievements, companies' own expectations have increased, as have the expectations of the public. The industry realizes that more work is required to achieve the promise of Responsible Care. These company and public expectations will shape the future of Responsible Care; so too will the continuing dialogue regarding sustainable development and the contributions of companies in the private sector to progress in sustainable development.

This section of the report presents challenges for the future. The summary is based on the new expectations held within the industry, as well as the stakeholder input that has been received at the local and national level, and also received at the international level through the UN Environment Programme (UNEP) process of preparing sector reports for the 2002 UN World Summit on Sustainable Development.¹

The future challenges for Responsible Care are grouped into three areas:

1. Continued implementation and extension of the initiative;
2. Performance reporting & assurance; and,
3. Dialogue & Partnership.

Continued Implementation and Extension of the Initiative

Within the chemical industry Even in countries that have been the pioneers in Responsible Care, continued effort is required to see that implementation is complete and performance improvement is maintained over time. In countries that have more recent-

ly begun Responsible Care, implementation assistance to companies will be the focus of activities in the next few years. There will also be several countries, with growing chemical industries, in which the industry should work to introduce Responsible Care and to begin the process of improving the health, safety and environmental performance of companies in those countries.

Throughout the chain of commerce After introduction and implementation of Responsible Care within chemical companies, the next step is to implement and extend the initiative through the "chemical" chain of commerce (e.g., first to customers, but also to suppliers and companies that provide transport, storage, waste management and other services to the chemical industry). Much progress has already been made through company outreach and peer influence; association partnership agreements at the national level have also been effective. More work will be necessary to meet the public's expectations for improved performance throughout the life cycle of chemical products.

Performance Reporting and Assurance

Individual companies have seen impressive gains in their health, safety and environmental performance as they implement Responsible Care. Similarly, there are some areas in which aggregate performance statistics collected at the national level show that companies implementing Responsible Care perform better, as a group, than the industry at large. For example, statistics of employee safety (injury and illness records) show that companies implementing Responsible Care have healthier and safer employees than other chem-

1. In collaboration with UNEP, the International Council of Chemical Associations (ICCA) prepared a major report entitled 'Industry as a partner for sustainable development' – the Chemical Sector Report to UNEP for the World Summit on Sustainable Development. The report is available on the ICCA website at www.icca-chem.org or UNEP DTIE's website at www.uneptie.org/wssd

ical companies, and other companies overall.

Despite the impressive performance gains of individual companies and in some areas, there does not exist at this time a consistent set of measures across the full range of health, safety and environment performance areas important to chemical companies.

In order to demonstrate to the public that chemical companies are making the progress that the public expects, the industry will be working with stakeholders to develop meaningful and credible means across the ICCA membership to allow verification of companies' implementation of Responsible Care. This needs to be developed in each country with that country's chemical industry stakeholders, finding commonalities across ICCA membership. The objectives for these means are that they will be consistent and comparable. If ready in place, the means will reflect the safety, health, and environmental performance of individual companies, and, when aggregated, of the group of companies implementing Responsible Care.

Performance measures will be important, yet the industry expects that performance statistics alone will not be responsive to public concerns about company and industry performance. There have already been efforts underway in national associations to review the performance of individual companies and to check that they are implementing Responsible Care. These efforts will continue and will evolve with experience. Even though many countries recognize the need to provide public assurance of Responsible Care imple-

mentation, it is clear that national differences in the cultural, legal, political and social context will lead to different ways of providing such assurance.

Dialogue and Partnership

Although "getting the job done" is the chemical industry's first priority, it is also important to have a dialogue with key stakeholders regarding their expectations for the industry, and industry's efforts in response. The chemical industry has considerable experience in this area. Many companies have corporate advisory committees and/or local community advisory panels to have such a dialogue. Also, many associations have national advisory panels in which to conduct such discussions. These forums for dialogue will continue and grow in the years ahead.

Partnerships are a development for the industry that is relatively more recent than dialogue. In the last few years, for example, the industry developed its initiative on High Production Volume (HPV) chemicals in partnership with the Organization for Economic Cooperation and Development (OECD). Similarly, in its Long-range Research Initiative (LRI) the industry has developed cooperative research agreements with national government research programs. It is expected that further partnerships will develop in the years ahead as the industry continues its efforts through Responsible Care.

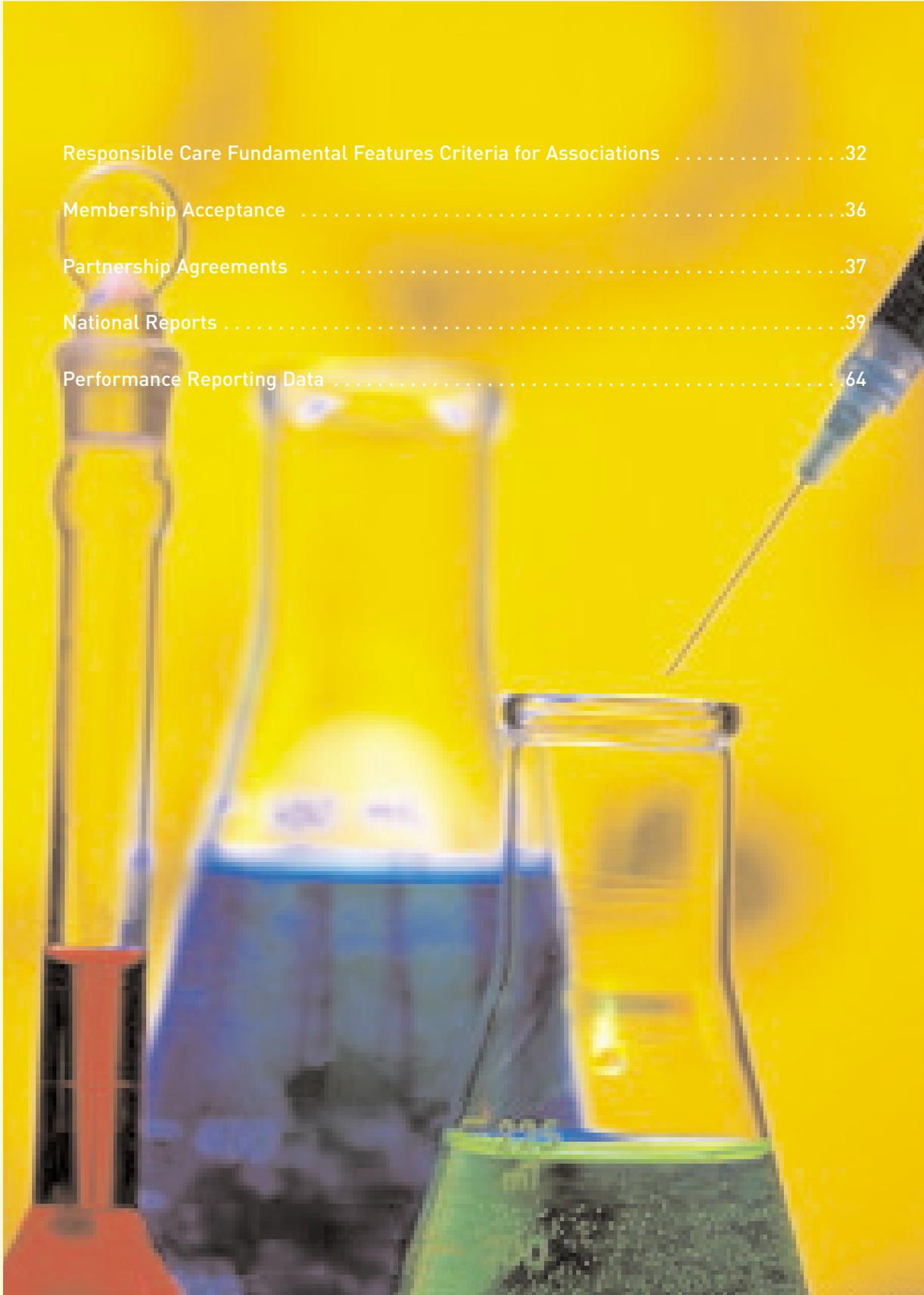


Statement on Responsible Care

of the International Council of Chemical Associations

Responsible Care is the voluntary initiative of the global chemical industry in which companies, through their national associations, commit to work together to:

- 
- continuously improve their company's and the chemical industry's performance in protecting people and the environment throughout the life cycle of their products and processes;
 - contribute to the sustainable development of local communities and of society as a whole;
 - inform their publics of the risks and benefits of what they make and do, and about their performance, achievements and challenges;
 - dialogue and work with their stakeholders at the local, national and international level to understand and address their concerns and aspirations;
 - cooperate with governments and organizations at all levels in the development and implementation of effective regulations and standards, and to meet or exceed those requirements;
 - extend Responsible Care to all those who manage chemicals.



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Appendix 1

Responsible Care Fundamental Features Criteria for Associations

Responsible Care is an initiative developed and adopted by chemical industry associations to improve the health, safety and environmental performance of their member company operations and products and the level of community involvement and awareness of the industry.

The fundamental features describe the required components of Responsible Care. These can be tailored to meet the specific culture and needs of the country implementing the ethic. The criteria associated with each stage of implementation of the features are detailed in the following pages. These have been defined by the ICCA Responsible Care Leadership Group to assist the primary national chemical associations in their effort to reliably and consistently assess the stage of their implementation of each feature.

An association will be deemed to have reached a stage when it is operating in compliance with substantially all of the criteria. Complete satisfaction of all criteria is not required for placement in that stage.

The involvement and support of a company's Chief Executive Officer is critical to the establishment of an overall Responsible Care ethic within an organization. In this context the CEO is defined as the most senior management person operating in the country.

Community involvement is desirable as early as practicable in the establishment of each fundamental feature because it will improve the relevance of processes introduced and because it contributes directly to the accomplishment of a primary Responsible Care objective.

It is not necessary to proceed at the same pace through the stages of each feature. Implementation

of Guiding Principles and Name and Logo protection will usually precede and Verification will often lag the implementation of other features. The implementation schedule overall can reflect the unique culture and situations of the country.

Protection of the global integrity of Responsible Care is a key ICCA objective. Consequently early attention to protection of its name and logo by the association is encouraged.

Fundamental features criteria

Initiating

The association is considering a plan or program to implement the feature, but has not yet begun to implement it.

Developing

The association is in the midst of developing a plan or program that establishes the feature.

Implementing

The association has completed the development of the plan or program to establish the feature and has in place the persons and/or processes necessary to maintain the feature and proceed with its continuous improvement.

1 Guiding Principles

Initiating

- Responsible Care board leadership group formed.
- Member interest/support surveyed.
- Commitment mechanism decided.
- Intentions communicated internally to ICCA.
- International models reviewed by leadership group.

Developing

- Working party formed and meeting.
- International models reviewed.
- Draft guiding principles published.
- Feedback from members being received.
- Viable level of CEO support confirmed.

Implementing

- Agreed guiding principles confirmed by association board.
- Document distributed to all CEOs.
- Signed commitments (or alternative) being returned by CEOs.
- Follow up on outstanding members commenced.
- Member company contacts/coordinators appointed.

2 Name, Logo

Feature summary

Adoption of a title and logo which clearly identify national programs as being consistent with and part of the concept of Responsible Care.

Initiating

- International standard reviewed by the leadership group.
- Name and logo adopted as appropriate.
- Intentions communicated internally to ICCA and feedback obtained.
- Rules for use of name and logo developed by working group.

Developing

- Rules adopted by the leadership group.
- Rules communicated to member companies.

Implementing

- Name and logo in routine use.
- Member companies observing established rules.
- Observance monitored.
- Only members of association are using Responsible Care name and logo.

3 Codes, Guides

Feature summary

A series of Codes, Guidance notes or Checklists to

assist companies to implement the commitment of Responsible Care to achieve continuous health, safety and environmental improvements.

Initiating

- International models reviewed by leadership group or working party.
- Mechanisms to be used formulated.
- Working party to establish overall structure formed and meeting.
- Member companies surveyed on draft proposals.
- Process for input from interested parties defined.
- Draft timetable published.

Developing

- Code structure (or equivalent) confirmed by CEOs.
- Individual code working groups established and meeting as appropriate.
- Draft codes or guidance developing and published in accordance with timetable.
- Member company feedback obtained.
- Interested party inputs incorporated as per agreed process.

Implementing

- Codes/guide published to timetable.
- Training sessions for member company coordinators held.
- Code or guidance implementation by members in progress.
- Mechanisms in place for intercompany sharing of experience.

4 Indicators

Feature summary

The progressive development of indicators against which improvements and performance can be measured.

Initiating

- International models reviewed by leadership group or working party.
- Mechanisms to be used formulated.
- Interested party issues/input included.
- Member companies surveyed on draft proposals.
- Draft timetable published.

Developing

- Appropriate working parties formed.
- Draft indicators agreed by member CEOs and interested parties.
- Timetable for implementation agreed.
- Member companies informed.
- Indicator reporting mechanisms agreed.
- Training for member companies conducted.
- Indicator measurements commenced by members to the timetable.

Implementing

- Indicator reporting commenced.
- Continued interested parties' comments obtained.
- Indicators part of company sharing discussions.
- Indicators made public.

5 Communications**Feature summary**

An on-going association and member company process of communication on health, safety and environmental matters with interested parties inside and outside the membership.

Initiating

- International models reviewed by leadership group or working party.
- Mechanisms to be used formulated.
- Process for formal input from external interested parties including government established.
- Special consideration given to local community input/concerns.
- Member companies surveyed/informed.
- Media relationships considered.

Developing

- External interested party input process functioning.
- Proposals for local communications formulated.
- Member company CEO agreement obtained.
- Training for member companies conducted.
- Pilot trials of local communications commenced.
- Target timetables/milestones set.
- Government kept informed.
- Media appropriately involved.

Implementing

- Interested party input process reviewed and updated as appropriate.
- Implementation of local processes proceeding to targets.
- Regular feedback from interested parties obtained. Issues addressed.
- Government reaction monitored and addressed.
- Media contact maintained.
- Responsible Care communications are part of company communications strategy.
- Internal and external feedback or surveys of Responsible Care awareness being obtained by most companies or by association.

6 Sharing**Feature summary**

Provision of forums in which company CEO and Responsible Care coordinators can share views and exchange experiences on implementation of the commitment.

Initiating

- Leadership group meeting regularly.
- International models reviewed by the leadership group.
- Mechanisms to be used formulated.
- Member company input obtained.

Developing

- Appropriate working parties and peer review groups established.
- Sharing mechanisms agreed.
- Timetable for meetings established.
- Company Responsible Care coordinators fully trained and functioning.

Implementing

- Regular CEO and Responsible Care coordinator sharing meetings held.
- Newsletter/communications commenced. Feedback obtained.
- Regional steering groups considered.
- Mutual aid/mentor partnerships considered.
- Specific issue working groups established.
- Participation in international industry sharing arrangements undertaken.

7 Encouragement**Feature summary**

Consideration of how best to encourage all association member companies to commit and participate in Responsible Care.

Initiating

- International models reviewed by the leadership group.
- Mechanism to be used drafted with emphasis on positive incentives and benefits.
- Possible encouragement and sanction considered.
- Member company input obtained.

Developing

- Working group established to recommend incentives/sanctions.
- Criteria for implementation of incentives/sanctions established.
- Positive incentives/benefits emphasized.
- Performance indicators and criteria for dealing with poor performance communicated to CEOs.

Implementing

- Performance indicators monitored for both high and low performers.
- Mechanisms are in place to recognize high performers and assist less advanced companies.
- Processes for dealing with persistent poor-performers in place.

8 Verification**Feature summary**

Systematic procedures to verify the implementation of the measurable (or practical) elements of Responsible Care by the member companies

Initiating

- International certification models and ICCA guidelines reviewed by leadership group.
- Mechanisms to be used formulated.
- Member company input obtained.

Developing

- Interested party inputs obtained.
- Verification procedures meeting ICCA guidelines are drafted.
- Member companies surveyed on draft proposals and trials underway.
- Timetable for implementation of verification procedures decided.

Implementing

- Verification (internal or external) procedures in use.
- Verification results used to continually improve Responsible Care implementation efforts.
- Verification results communicated by companies or association to interested parties.

Appendix 2

Membership Acceptance

Application for Responsible Care Leadership Group membership and endorsement of a national association for Responsible Care implementation

Philosophy

The Responsible Care Leadership Group's intent is to spread the implementation of Responsible Care as broadly as possible within the chemical and allied industries and to be inclusive of new country participation.

The Responsible Care Leadership Group has an obligation to the global industry to ensure that the national associations that it endorses are representative, committed and capable.

Application for Responsible Care Leadership Group membership is not an audit or examination. Nor is it necessary to have substantial Responsible Care features in place at the time of application.

The Responsible Care Leadership Group is committed to assist an applicant to develop its most effective Responsible Care implementation plan by sharing the experiences of recent and longer established member associations.

The Responsible Care Leadership Group requests the information below to ensure that it protects the integrity of Responsible Care and best spreads its implementation.

Membership/endorsement criteria

- The association is the nation's primary chemical association.
- The association represents significant chemical production and/or distribution in the country.
- The association's Board has taken action to formally ratify Responsible Care.

- A significant number of the association's members have committed to implement the initiative.
- An ICCA mentor endorses the applicant's acceptance based on detailed knowledge of the implementation program proposed by the association and the ICCA Guidelines for associations implementing Responsible Care.

Application information required

- National association members list and their indicative coverage in aggregate of the total and allied industry supply in the country (including as appropriate, industrial, agricultural, specialty, pharmaceutical and other chemical products).
- Details of the proportion of the above national association members that have signed a commitment to implement Responsible Care.
- Details of how the national association Board has ratified or confirmed its commitment to Responsible Care implementation and to compliance with the ICCA fundamental features of Responsible Care.
- Details of actions completed, key plans for Responsible Care implementation over the next 6-12 months and the association resources available for these plans.
- Indicative plans for implementation of the eight Responsible Care Fundamental Features.
- Examples of any Responsible Care materials currently available for use in promotion of the ethic to companies and for their use in its implementation. (These could include Guiding Principles, publicity materials, draft code(s), etc.)

15 May 1997 - Responsible Care Leadership Group

Appendix 3

Partnership Agreements

INTERNATIONAL COUNCIL OF CHEMICAL ASSOCIATIONS - Statement of Principles

Responsible Care partnerships

The International Council of Chemical Associations (ICCA) supports the extension of Responsible Care throughout the chemical manufacturing community and to sectors allied with the chemical industry (chemical transporters, distributors, traders, users, etc.).

To this end, the ICCA encourages all national chemical associations that have been approved to administer Responsible Care to expand participation in the initiative within their borders. This should be done either by encouraging associations whose members have an interest in chemicals to become partners in Responsible Care, or by recruiting companies with such interests to become involved directly in the Responsible Care initiative.

The national chemical association that has been approved by the ICCA to administer Responsible Care shall be responsible for approving the partnership arrangements with prospective partner associations and companies. At a minimum such prospective partner associations or companies must operate their Responsible Care programs under the same commitment and standards upheld by the member association. However, the application of Responsible Care can be tailored to their specific operations, and determined appropriate by the member association.

The national chemical association that has been approved by the ICCA to administer Responsible Care retains responsibility for the integrity of the Responsible Care process, logo and trademarks, and ensures that the prospective partner association or company will use the Responsible Care logo and trademarks according to ICCA guidelines. Misuse of the Responsible Care logo or trademarks by partner associations or companies will be addressed by the national chemical association that has been approved by the ICCA to administer Responsible Care.

Guidelines for Responsible Care partnerships

The national chemical association that has been approved by the ICCA to administer Responsible Care will apply the following guidelines in establishing partnerships with associations and companies within their borders:

- Ensure that the primary business of the prospective partner involves chemical manufacturing, transportation, distribution, trading, or use, (or is an association that represents companies involved in these businesses).
- Ensure that prospective partners maintain the integrity and public credibility of Responsible Care by following through on the commitments contained in the initiative.
- Ensure that the expectations of chemical industry stakeholders are being addressed by the partner association or company through its implementation of Responsible Care.
- Ensure that prospective partner associations or companies:
 - demonstrate senior level support for the Responsible Care ethic;
 - commits to carry out the Responsible Care process, thereby maintaining a consistent approach to advancing health, safety and environmental performance improvement in a fashion that is responsive to public input;
 - adhere to national guidelines for using the Responsible Care logos and trademarks.
- Ensure that partner associations or companies demonstrate their ability to adequately resource their support for implementing Responsible Care.
- Ensure that partner associations or companies report annually on the progress of implementing and maintaining Responsible Care.
- Ensure that partnerships must remain consistent with ICCA policies.
- Ensure that the ICCA secretariat is kept informed of all partnerships.
- Develop a partnership agreement which encapsulates these guidelines.

Appendix 4 National Reports

ARGENTINA

Cámara de la Industria Química y Petroquímica - CIQyP
Avda. Cordoba 629
Piso 4
Buenos Aires
Argentina

Contact Nelson Culler
Tel: 5411 4 313 1059 / 0944
Fax: 5411 4 312 4733
E-mail: ambiente@ciqyp.org.ar
Web site www.ciqyp.org.ar
Adopted Responsible Care in 1992

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Community Awareness and Emergency Response - Pollution prevention - Process safety - Distribution - Employee health & safety - Product Stewardship.

2 Indicators of performance

Lost time injuries - Distribution incidents - Environmental incidents - Quantity of emissions and wastes - Energy consumption - Environmental investments.

3 Communication with interested parties

Well-established links with government authorities, NGOs and other groups, presentations at seminars. A Responsible Care video is available for use by CIQyP and members in meetings with internal and external audiences. Brochure explains main points and achievements of Responsible Care. Dedicated Responsible Care exhibition for use at health, safety and environment exhibitions.

4 Mutual assistance forums

CIQyP's Responsible Care Committee meets monthly to track implementation and share experiences and best practices, with an average attendance of 25 Responsible Care coordinators. A 430-page guidance manual on Responsible Care implementation has been distributed to CIQyP members and other national Spanish-speaking associations. Continued assistance from CIQyP to the Uruguayan association ASIQUUR on Responsible Care with presentations, technical meetings with industry coordinators and general management.

5 Process to encourage full participation of association members

Responsible Care is not a condition of membership. Initial commitments obtained through direct invitations to company CEOs from CIQyP Executive Board. 55 companies representing 71% of members are implementing Responsible Care. Every new member is invited to join, and members who have not yet signed are periodically invited to do so. Peer pressure and communication of the benefits of Responsible Care are the main means of encouraging companies to commit to the initiative.

6 Implementation assurance

Annual self-evaluations are collected from members to track

implementation progress. Five rounds of self-evaluations were completed up to Q2 2002. Verification audits are carried out by a team made up of CIQyP's trained auditors and site representatives to verify company self-assessment and the status of the internal program. 94 audits were performed up to March 2002. The auditors review documentation and interview operators and supervision line. Results are scored to enable comparison in successive audits. Audits are performed every three years or more frequently in the case of plants with low scores. As yet there is no participation by community representatives. A steering committee is evaluating adoption of more sophisticated audits, performed by international certification bodies.

Additional features

Local name: Cuidado Responsable del Medio Ambiente
 Partnership Program: Non-members with closely related processes and products have been invited to sign up to Responsible Care. In total, 20 transportation companies, three paint manufacturers and two waste treatment companies had joined up to March 2002. Guidance on preparation of Material Safety Data Sheets has been issued to assist member companies.

AUSTRALIA

Plastics and Chemicals Industries Association - PACIA
Level 2, 263 Mary Street,
Richmond, Victoria 3121
Australia

Contact Darren Ackland
Tel: 61 2 9888 4360
Fax: 61 2 9888 4477
E-mail: dackland@pacia.org.au
Web site www.pacia.org.au
Adopted Responsible Care in 1989

Program description

1 Codes, guidance notes or checklists for implementation

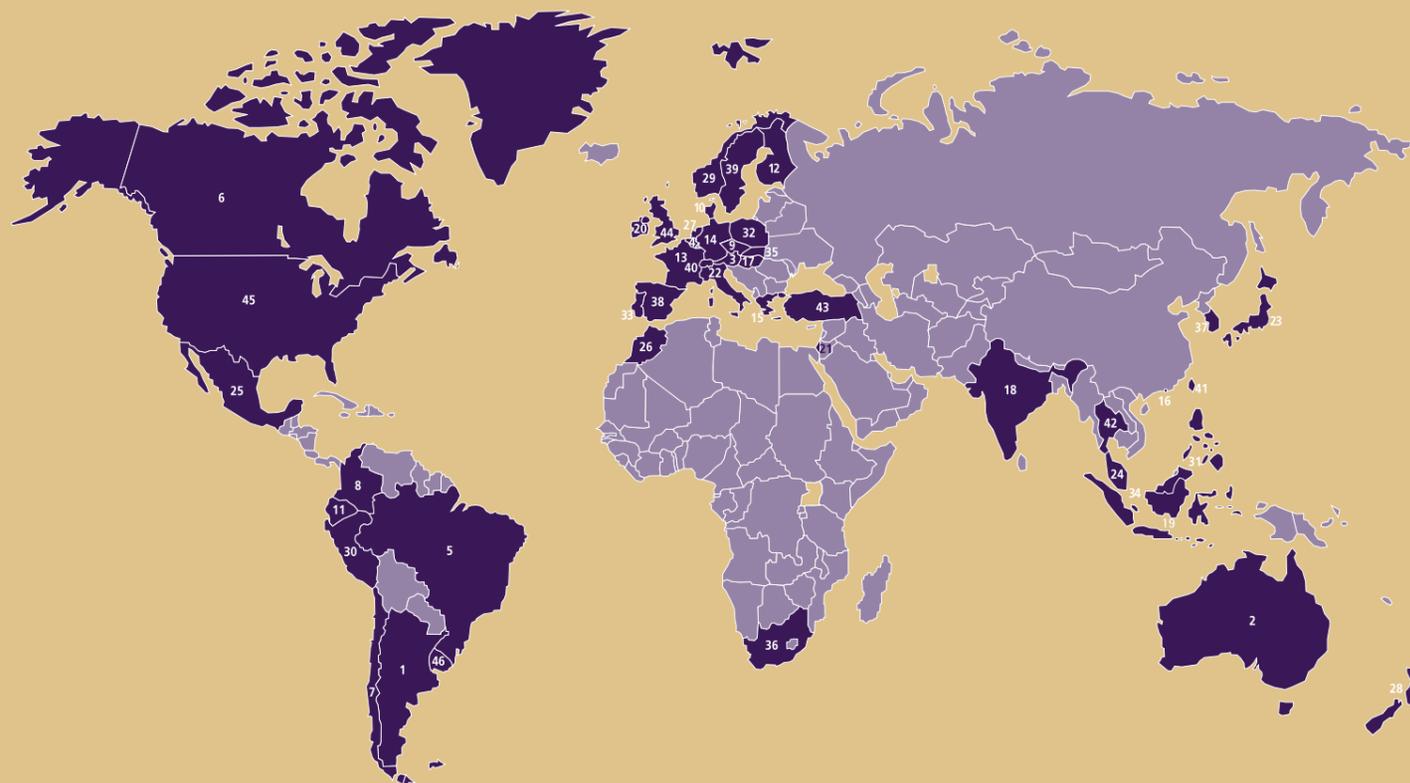
Codes: Community Right To Know - Manufacturing Process Safety - Environment Protection - Storage and Transport Safety - Employee Health and Safety - Product Stewardship

2 Indicators of performance

Annual Safety Surveys track illness/injury, plant incidents, transport incidents, emissions reductions, and health, safety and environment initiatives. Self-assessments are collected from members to track Code compliance. Following the 2001 review of Responsible Care, a benchmark self-assessment of each Code is being completed by each company by the end of 2002.

3 Communication with interested parties

One national and 30 local community advisory panels in operation. National panel meets quarterly and local panels generally every one to three months. Responsible Care implementation framework



- | | | |
|-------------------|-----------------|---------------------|
| 1. Argentina | 17. Hungary | 33. Portugal |
| 2. Australia | 18. India | 34. Singapore |
| 3. Austria | 19. Indonesia | 35. Slovak Republic |
| 4. Belgium | 20. Ireland | 36. South Africa |
| 5. Brazil | 21. Israel | 37. South Korea |
| 6. Canada | 22. Italy | 38. Spain |
| 7. Chile | 23. Japan | 39. Sweden |
| 8. Colombia | 24. Malaysia | 40. Switzerland |
| 9. Czech Republic | 25. Mexico | 41. Taiwan, ROC |
| 10. Denmark | 26. Morocco | 42. Thailand |
| 11. Ecuador | 27. Netherlands | 43. Turkey |
| 12. Finland | 28. New Zealand | 44. United Kingdom |
| 13. France | 29. Norway | 45. United States |
| 14. Germany | 30. Peru | 46. Uruguay |
| 15. Greece | 31. Philippines | |
| 16. Hong Kong SAR | 32. Poland | |

is set out to clarify the roles expected of each company, of PACIA and of the national community advisory panel to ensure Responsible Care is implemented and that community views on people, environment and sustainability are understood. Annual Responsible Care report. Latest Open Door (March 2000) involved 35 sites, which hosted around 20,000 visitors. Next Open Door to be held in March 2003. Presentations on Responsible Care and related topics at conferences of key government/community opinion leaders. Industry assistance is given in joint programs with local government for the collection/disposal of surplus household chemicals. The 2001 review of Responsible Care involved over 400 stakeholders including industry, government and community.

4 Mutual assistance forums

Regular communications meetings aimed at senior management and Responsible Care coordinators, with additional workshops/training sessions on Responsible Care codes. About 40 days of training courses covering a range of topics from warehousing and transport to risk assessment and emergency response, and around 50 ad hoc Responsible Care briefings annually for member company management teams.

5 Process to encourage full participation of association members

Responsible Care is a condition of membership of the chemicals and importer/distributor sectors of PACIA; members of the plastics sector participate in an alternative program known as Plascare. PACIA members account for over 75% of total Australian chemical industry turnover. A PACIA "starter kit" and workshops introduce and encourage other sectors to participate in Responsible Care. Tracking of Australian subsidiaries of chemical multinationals checks on participation.

6 Implementation assurance

Self assessment for a different Code each 3 months. 10% of companies are chosen randomly for external verification by an independent auditor. A Certification Program will be developed by the end of 2002. Once implemented, an 80% compliance to the Responsible Care Codes will be required to continue to use the Responsible Care Logo.

Additional features:

Household Chemical Collection days

Cross-reference Guide for each Code to assist integration with ISO 14001 and 9001 and national occupational health and safety requirements.

Responsible Care implementation framework

Community complaint resolution system

Development of Carrier Accreditation Scheme for companies transporting hazardous chemicals

AUSTRIA

Fachverband der Chemischen Industrie Österreichs - FCIO

Wiedner Hauptstrasse 63

Postfach 325

A - 1045 Wien 4

Austria

Contact: Dr Dominique Kalt

Tel: 43 1 501 05 3365

Fax: 43 1 501 05 280

E-mail: kalt@fcio.wko.at

Web site www.fcio.at

Adopted Responsible Care in 1992

Program description

1 Codes, guidance notes or checklists for implementation

Guidance documents: Community Awareness and Emergency Response - Pollution prevention - Process safety - Distribution - Employee health & safety.

2 Indicators of performance

FCIO collected IoPs under Cefic reporting guidelines from 1998 to 2000 using the new Responsible Care questionnaire 2001. A study, which FCIO will publish during 2002, compares the data from certified and non-certified companies.

3 Communication with interested parties

Brochure gives overview of the international Responsible Care program and Austrian implementation and activities.

4 Mutual assistance forums

FCIO's Committee for Health, Safety and Environment-Responsible Care meets regularly. These meetings serve as a forum for information exchange and experience sharing. FCIO has organized seminars and experience exchange forums concerning the harmonisation of EU-legislation (VOC, EPER, Seveso II). Guidelines for safety data sheets (SDS) have been updated and a number of SDS seminars organized.

5 Process to encourage full participation of association members

Responsible Care is not a condition of membership. Peer pressure and communication of the benefits of Responsible Care are the main means of encouraging companies to commit to the initiative.

6 Implementation assurance

Self-assessment through FCIO documents and questionnaires. Third party verification in place since 1992, requiring little adaptation to meet ICCA criteria. By end 2001, 34 companies (8% of total number) were certified Responsible Care according to the Austrian third party auditing process. These 34 companies account for more than 50% of the turnover of the Austrian chemical industry.

Additional features

Local name Verantwortliches Handeln hat Zukunft

FCIO has prepared a comprehensive auditing flowchart for members to use as part of verification process, last revised in July 1998. Emergency distribution response scheme - TUIS. System exists for jointly examining Responsible Care and the European Union's Eco-Management and Audit Scheme.

BELGIUM

Federation of the Chemical Industries of Belgium - Fedichem

Square Marie-Louise 49

1000 Brussels

Belgium

Contact Claude Klein

Tel: 32 2 238 97 37

Fax: 32 2 238 9941

E-mail: cklein@fedichem.be

Web site www.fedichem.be

Adopted Responsible Care in 1991

Program description

1 Codes, guidance notes and checklists for implementation

Publication in 1996 'Responsible Care, a commitment of the Chemical Industry'. Self-assessment and Implementation Guide, reviewed in 1999. Comprehensive Responsible Care Reference Document completed by Walloon section of Fedichem. Product Stewardship brochure issued in 2000 and Implementation Guide in

2001 incorporating self-assessment. Work on three other modules, indicators of performance, risk-analysis and supplier/customer relationship, is ongoing.

2 Indicators of performance

Emissions to air and water - Waste production - Lost time accidents - Water and energy use - Environmental investments, running costs and taxes. Updated every two years.

3 Communication with interested parties

Active participation in Open Door Days organised by universities, contacts with teachers, students and decision-makers. Distribution of publications intended for journalists, students and politicians. Regular co-operation with Belgian Chamber of Commerce in Chemical Products (part of Fedichem) on Product Stewardship. Several member companies have local Community Advisory Panels. The vast majority of large-scale member companies issue Responsible Care reports. The "Youth and chemistry" program, promoting the chemical industry to youngsters, reached some 18,000 students in 2001. The Fedichem Indicators of Performance is distributed widely among stakeholders. The fifth Indicators of Performance survey covers 2000 and 2001; previous results can be accessed on the website.

4 Mutual assistance forums

Responsible Care managers of the major companies work together in several local Responsible Care groups. The groups meet on a regular basis to share experiences, which is particularly beneficial for smaller companies. The "Implementation and self-assessment guide", provided by Fedichem, facilitates implementation. Individual assistance is given on request, quite often with regard to communication with neighbours and stakeholders.

5 Process to encourage full participation of association members

Responsible Care is a condition of membership. All 750 Fedichem members are signed up to the initiative.

6 Implementation assurance

This is carried out through self-assessment. Significant changes in performance data from member companies are discussed on an individual basis. SMEs are visited on a regular basis, and Responsible Care is always a theme during these visits.

Additional features

Local name Verantwoord en Zorgvuldig / Gestion Responsable
Belintra - part of Cefic's ICE program on prevention of transport incidents - involves 62 Belgian companies.

BRAZIL

Associação Brasileira da Indústria Química e de Produtos

Derivados - Abiquim

Rua Santo Antonio 184/18o andar

São Paulo SP

Brazil CEP 01314-900

Contact Marcelo Kós Silveira Campos

Tel: 55 11 3242 1144

Fax: 55 11 3242 3818 / 0919

E-mail: mkos@abiquim.org.br

Web site www.abiquim.org.br

Adopted Responsible Care in 1992

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Employee health and safety - Process safety - Environmental protection - Transport and distribution - Dialogue

with the community - Emergency preparedness and response - Product Stewardship.

Currently being revised and updated

2 Indicators of performance

Introduced set of 15 IoPs in mid 1998 and 7 in 1999 covering all codes.

3 Communication with interested parties

Annual national Responsible Care meetings expand on local outreach efforts and involve NGOs, trades unions and community representatives. Various CAPs established in regions/cells and companies. Open door and other local initiatives.

4 Mutual assistance forums

Nine Regional Executive Leadership Groups. Seminars and courses held for membership.

5 Process to encourage full participation of association members

Responsible Care became mandatory for ABIQUIM members in 1998. Special attention given to those companies not yet participating including direct contact with individual CEOs.

6 Implementation assurance

Introduction of verification process inspired by US Management Systems Verification but expanded to include new areas and allow future rating. Longer term, new management system/performance verification scheme planned to be based on quality award methodology enabling external verification under Brazil's Quality Award scheme. Annual self-evaluations also track code implementation progress. Each year ABIQUIM sends to all members a document setting out codes implementation targets, the requirement to submit performance indicators data, and other targets that have to be achieved during the year.

Additional features

Local name Atuação Responsável

Action plan to update and expand Responsible Care approved in 2002 and includes taskforce addressing sustainable development

CANADA

Canadian Chemical Producers' Association - CCPA

Suite 805

350 Sparks Street

Ottawa

Ontario K2R 7S8

Canada

Contact Brian Wastle

Tel: 1 613 237 6215

Fax: 1 613 237 4061

E-mail: bwastle@ccpa.ca

Web site www.ccpa.ca

Adopted Responsible Care in 1985

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Community Awareness and Emergency Response - Research and development - Manufacturing - Transportation - Distribution - Waste management.

2 Indicators of performance

Emissions of all substances to air, water and land - Amounts of hazardous and non-hazardous waste - Transportation incidents - Worker health and safety - Process related incidents.

These are aggregated by CCPA annually, but companies are verified to have comprehensive IoPs for all relevant Code aspects such

as Product Stewardship, community involvement, etc.

3 Communication with interested parties

National Advisory Panel continues to meet 3 times a year and is key to all decisions relating to Responsible Care. Annual CCPA Responsible Care report, with Panel letter. Companies required and verified to have community advisory processes, usually panels, at all sites.

4 Mutual assistance forums

All CEOs belong to one of five regionally-located Responsible Care Leadership Groups which meet quarterly. Conferences for Responsible Care coordinators as needed. Guidebooks for each code, plus numerous supporting tools, guides, aids etc. Verification teams are a vehicle for sharing best practices, and verification results are widely shared across the membership. Members-only web site called MemberLink is now the primary communication tool with members.

5 Process to encourage full participation of association members
Responsible Care is an obligation for members and partners. CCPA has a process for expulsion for non-adherence to Responsible Care.

6 Implementation assurance

All member and partner companies are verified every three years to have instilled the Responsible Care ethic throughout the company, to have sound management systems for all 151 code elements and to be demonstrating continuous improvement in performance in all aspects of Responsible Care deemed important to CCPA, the company and its stakeholders.

Additional features

TransCAER scheme (CAER elements of Transportation Code), and Transportation Emergency Assistance Plan (TEAP).

SH&E voluntary agreements: Accelerated Reduction/Elimination of Toxins (ARET); Climate Change Voluntary Challenge Registry; Memorandum of Understanding with federal & provincial governments and NGOs on Responsible Care.

Partnerships: CN Rail, CP Rail, Harmac (trucking company), Nexen Energy (gas well & refining company), Procor (rail car manufacturer/leasor); Canadian Association of Chemical Distributors (association).

CHILE

Asociación Gremial de Industriales Químicos de Chile - ASIQUIM A.G.

Av. Andrés Bello 2777 Of. 501

Las Condes

Santiago

Chile

Contact Patricio Kurte

Tel: 56 2 203 3350

Fax: 56 2 203 3351

E-mail: pkurte@asiquim.cl

Web site www.asiquim.cl

Adopted Responsible Care in 1994

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Transportation and distribution - Process safety - Community Awareness and Emergency Response - Employee health and safety - Pollution prevention - Product Stewardship.

Current versions were published in March 2001.

2 Indicators of performance

Number of fatalities - Lost time injuries frequency rate - Air emissions SO₂, NO_x, CO₂ - Water emissions phosphor compounds, nitrogen compounds, COD - Energy consumption and efficiency

Codes self-evaluation answers provide data.

3 Communication with interested parties

Members of ASIQUIM's Responsible Care Commission participate in conferences and seminars related to SH&E matters and maintain continual communication with relevant public and private organizations.

The Responsible Care Commission participates in discussion and development of SH&E regulations to be implemented by government agencies. Voluntary agreements have been signed with government agencies.

The annual Responsible Care Day (held since 1992) and the ASIQUIM verification process beginning in 2002 both involve outside stakeholders.

Some members have set up or are setting up programs with their local community.

4 Mutual assistance forums

A database with all Responsible Care contacts in member companies has been set up. Various events including Responsible Care issues are prepared regularly for members.

Audits for Responsible Care Awards are developed by ASIQUIM's Responsible Care Commission, which includes ASIQUIM employees and member companies' experts. In the past few years ASIQUIM has established Regional Responsible Care Committees in major areas of chemical production. These committees are composed of SH&E professionals from local companies.

5 Process to encourage full participation of association members
Responsible Care is mandatory for new members since 1997 and ASIQUIM is considering making it mandatory for all members.

Responsible Care Awards and verification process are only open to Responsible Care companies. The Responsible Care name and logo can only be used by signatory companies.

Every year ASIQUIM recognises best performers in a public event called the Annual Responsible Care Day.

6 Implementation assurance

Five companies will participate in a pilot verification process involving outside stakeholders during 2002 with a view to expanding in 2003. Since 1993, member companies' implementation levels have been checked through means of plant audits developed under the Responsible Care Awards process, which may be 'upgraded' to act as the verification process.

Additional features

Local name: Conducta Responsable.

Agreement signed with a leading private organisation for occupational safety and employee health issues, Asociación Chilena de Seguridad (ACHS), to cooperate on national implementation of Responsible Care.

Two voluntary agreements signed with Water and Sewage Superintendence, related to prevention of water pollution; and with the Health Ministry on improving management of containers for hazardous chemicals. Both agreements are supported by the Cleaner Production Agency (part of the Economy Ministry). New voluntary agreements are being studied.

COLOMBIA

Asociación Colombiana de Industrias Plásticas - ACOPLASTICOS

Consejo Colombiano de Seguridad - CCS

Asociación Nacional de Industriales - ANDI

Calle 69 No. 5-33

Bogotá, D.C.

Colombia

Contact Ana Elvia Pardo de Castro

Tel: 57 1 347 20 15 / 57 1 346 06 55

Fax: 57 1 249 69 97

E-mail: aepardoc@cisred.com and

gerencia@responsabilidadintegral.org

Web site: www.responsabilidadintegral.org

Adopted Responsible Care in 1994

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Community Awareness and Emergency Response - Process safety - Distribution and transportation - Environmental protection - Health and safety - Product Stewardship

2 Indicators of performance

Transportation incidents - Air emissions (5 parameters) - Discharges to water (10 parameters) - Wastes (including toxic) - Water and energy consumption - Environmental, Health and Safety (EHS) Investments - EHS Operating Costs - Number of workers (men and women) - Number of Contractors (men and women) - EHS Awareness - Community Complaints - Number of Fatalities by Labor Accidents - Lost Time Injuries Frequency Rate - Severity Rate - Number of Emergency Drills

Report scheduled for publication September 2002.

3 Communication with interested parties

Several meetings with community and government officials have made progress towards endorsement of Responsible Care. Some companies are developing links with the community. The 2002/03 media communications plan has been established. An independent web site has been developed.

4 Mutual assistance forums

Training sessions for new members' Responsible Care coordinators and teams are ongoing. The Responsible Care Steering Committee meets every couple of weeks. Executive Leadership Groups, regional meetings and workshops are held. Technical committee for each Code of Practice acts as the main vehicle for sharing experiences. Action plan for 2002/03 defined and underway. Responsible Care coordinators fully trained.

5 Process to encourage full participation of association members

Commitment to Responsible Care is not a condition of membership of any of the three associations jointly implementing the initiative in Colombia, but the crop protection sector group associated with ANDI does require members to sign up. Peer pressure and new mechanisms set up to emphasize positive benefits and incentives will encourage greater participation.

6 Implementation assurance

As part of the ongoing verification process, 21 companies were verified in 2001 and 20 have been scheduled by end 2002. A complete set of up to date documents, procedures and tools have been developed and tested. 90% of companies have been verified at least once.

Additional features

Local name Responsabilidad Integral Colombia

The program is supported by a group of three national industry

organizations - The Colombian Plastic Manufacturer's Association-ACOPLASTICOS; the Colombian Safety Council-CCS; and the National Industrialists Association-ANDI.

Partnership Program: A joint program to promote Responsible Care principles applied to environmental management systems in 15 SMEs based in Bogotá City is under development with the Department of Environment. Some of these SMEs are suppliers and contractors working with Responsible Care companies.

CZECH REPUBLIC

Svaz chemického průmyslu _eské republiky - SCHP _R

Kodanská 46

100 10 Prague 10

Czech Republic

Contact Ivan Zika

Tel: 420 2 6715 4136

Fax: 420 2 6715 4130

E-mail: mail@schp.cz

Web site: www.schp.cz

Adopted Responsible Care in 1994

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Proactivity* - Health and safety - Integrated pollution prevention and control - Reduction of past and existing environmental damage - Emergency preparedness - Environmental management - Environmental education and training - Information openness.

*The Proactivity code dates back to 1994 when the country was adjusting to major changes after 40 years of a command and control system. It helps define behaviour for member companies and their employees, both on and off site, in areas like cooperation and dealing with external stakeholders as well as HSE and reputation issues.

2 Indicators of performance

Emissions to air - Emissions to water - Waste generation - Energy consumption - Accidents at work - Distribution incidents
In 2001, 30 companies provided IoPs data against 25 in 2000.

3 Communication with interested parties

SCHP issues an annual Responsible Care report (6 to date), as do most manufacturing companies signed up to the initiative. Open days and regular meetings with local government deputies were organised by 25 member companies. In 2001, the SCHP meeting for member companies' CEOs was devoted to HSE issues and relevant legislation, and was attended by representatives from the Industry and Trade and Environment ministries. Responsible Care Committee includes external stakeholders.

4 Mutual assistance forums

Twice-yearly CEO meetings to discuss environmental issues. Most member companies participated in two seminars co-organised by the Chemical Industry Labor Union and SCHP aimed at improving SH&E at site level.

5 Process to encourage full participation of association members

Responsible Care is not a condition of SCHP membership but by end 2001, 55 companies had signed up. Peer pressure and Responsible Care successes are used to encourage others. SCHP continues to help companies implement EMS and EMAS II and QMS as practical tools to complement Responsible Care programs and improve product competitiveness.

6 Implementation assurance

An independent committee including association and external experts appointed by SCHP Board of Directors reviews annual self-assessment of Responsible Care goals and results according to SCHP implementation and assessment guide. Increased participation of independent deputies from industrial regions' administration in the Committee planned for 2002/03.

Additional features

Local name: Odpovedne podnikani v chemii

Renewal of agreement covering Transport Information Accident Response System (TRINS) with Ministry of the Interior.

Voluntary agreements: gradual decrease of phosphorus content in detergents; 6 member companies have been audited under pilots for a Voluntary Energy Efficiency Program.

Seven companies have been awarded Safe Enterprise citations by the Czech Occupational Safety Office.

DENMARK

Procesindustriens Brancheforening - PIBF (formerly FDKI)
Confederation of Danish Industries
DK-1787 Copenhagen V

Contact Jacob Jessen

Tel: 45 33 77 33 61

Fax: 45 33 15 17 22

E-mail: jj@fdki.dk

Adopted Responsible Care in 1995

Program description

1 Codes, guidance notes or checklists for implementation

Guidelines: Environmental management/reporting - Emergency response -

Occupational environment management.

2 Indicators of performance

IoPs aligned with Cefic HSE Reporting Guidelines

3 Communication with interested parties

No formal structure

4 Mutual assistance forums

No formal structure

5 Process to encourage full participation of association members

Responsible Care is not a condition of membership. PIBF relies on peer pressure to encourage companies to participate; to date, 72% of the membership has signed up to Responsible Care.

6 Implementation assurance

No formal system

Additional features

Partnership program for Traders & Distributors Association has been agreed. Emergency response system in place since 1994.

ECUADOR

Asociación de Productores de pinturas, resinas, tintas y químicos del Ecuador -APROQUE
Av. República No. 1783 y Av. Atahualpa. Edf. Prisma Dos. Of. 8B
Quito, Ecuador

Contact Miguel Costales / Roberto García

Tel: 593-2 244 6660

Fax: 593-2 292 3487

E-mail: aproque@andinanet.net

Adopted Responsible Care in 1999

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Process safety - Environmental protection - Community awareness and emergency response - Distribution and transport
Under development: Product Stewardship - Health and safety

2 Indicators of performance

Currently 19 IoPs covering the four codes being implemented (see above): Safety investments - Plant incidents - Environmental investments - Pollution - Water and energy use - Preparedness - System management - Transport incidents
Responsabilidad Integral-Ecuador obtained only partial results from companies' 2000 reports. These were used to develop new IoPs guidance, which was published in February 2002. First results are expected late in 2002.

3 Communication with interested parties

Strategic alliance with the main environmental NGO in the country for spreading, training and implementation of the codes continues. This project has financial support from the Swiss Agency for Development and Cooperation (SDC) until 2005.

Communication of the Responsible Care program takes place in the press, radio, television and specialised magazines. Publication of the Responsabilidad Integral-Ecuador newsletter four times a year is aimed at private business, government, and other Responsible Care Latin American programs.

4 Mutual assistance forums

A yearly plan for technical training in the four codes is prepared and implemented. Thirty-one training meetings and exchange of experiences in safety, environment and emergency response (307 training hours and 830 participants in total), since 1999. Twelve visits to industrial plants for technical training, including two visits to Colombian Responsible Care industrial plants in Bogotá, since 1999. IoPs training courses for Responsible Care coordinators. Mutual Assistance Committees formed in Guayaquil and Quito, each with three companies participating. Cleaner Production pilot projects are being developed by two Responsible Care companies. Participation as observers in spill-drill organized by Colombian Responsible Care program in Bogotá. Yearly evaluation meetings are organized with member companies' general managers and technical staffs. Five technical documents for process implementation published.

5 Process to encourage full participation of association members

Commitment to Responsible Care is not a condition of membership in APROQUE but 60% of companies have already signed up. Communication materials (posters, CDs, brochures) designed for members internal training related to Responsible Care principles and the logo have also helped promote the initiative within Ecuador.

6 Implementation assurance

84% of Responsible Care companies have done self-evaluations of the three codes.

60% of companies have presented their annual action plan.

An official verification scheme is under development and verifications will begin by end 2002 at five companies.

Additional features

Local name: Responsabilidad Integral-Ecuador

The program is supported by APROQUE and developed under a strategic alliance with Fundación Natura, the main environmental NGO in Ecuador. Financial support is provided by the Swiss Agency for Development and Cooperation (SDC).

FINLAND

Kemianteollisuus ry - KT RY

P O Box 4

FIN - 00131 Helsinki

Finland

Contact Aimo Kastinen

Tel: 358 9 172 84 320

Fax: 358 9 630 225

E-mail: aimo.kastinen@kemia.ttiitot.fi

Web site www.chemind.fi

Adopted Responsible Care in 1992

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Process safety - Safety in transportation - Product Stewardship - Waste management - Environmental performance.

2 Indicators of performance

Discharges to water - Releases to air - Waste management - Process safety - Transportation safety - Product Stewardship - SH&E training - SH&E spending - Energy and water consumption - Management systems - Communication.

45 IoPs in total.

3 Communication with interested parties

Annual Responsible Care IoPs report in Finnish and English; key figures also on web site. National results published for the tenth time in 2002; the report is well established with stakeholders. Local and national press conferences held when publishing IoPs etc. Annual Open Door week. Yearly presentation on Responsible Care to Chemical Congress. Advertising campaigns. Nearly half participating companies have some form of community advisory panel.

4 Mutual assistance forums

Federation organises meetings for Responsible Care coordinators at least twice a year and holds various themed seminars. Theme in 2001 was safety. Responsible Care was communicated through success stories from member companies published in the annual Progress Report, the KT RY stand at the National Chemistry Fair and in other publications.

5 Process to encourage full participation of association members

Responsible Care is not a condition of membership. Members encouraged to commit to Responsible Care through regular information, peer pressure and dialogue between CEOs and senior executives. Self-evaluation checklists have been in use since 1992, and companies are increasingly involved in self-assessment. By the end of 2001 a total of 121 companies had committed to Responsible Care, representing 65% of total employees in the chemical industry and over 80% of production volume. One fifth are companies with over 250 employees and one third are companies with fewer than 50 employees.

6 Implementation assurance

Verification process compatible with Emas and ISO developed, including training on self-assessment for members. Inclusion of third party verifiers is optional.

Additional features

Local name Vastuu Huomisesta

Partnership agreement between KT ry and Association of Finnish Technical Traders Chemical Division. SH&E voluntary agreements:

energy efficiency and conservation. Emergency distribution response system.

FRANCE

Union des Industries Chimiques - UIC

Le Diamant A

F-92909 Paris la Défense Cedex

France

Contact Catherine Lequime

Tel: 33 1 46 53 11 26

Fax: 33 1 46 53 11 04

E-mail: clequime@uic.fr

Web site www.uic.fr

Adopted Responsible Care in 1990

Program description

1 Codes, guidance notes or checklists for implementation

Over 50 technical and guidance documents have been published by UIC for its members; these documents cover all aspects of SH&E and Responsible Care.

2 Indicators of performance

Occupational safety - Air emissions - Water emissions - Waste generation - Energy consumption - Environmental investments. For the third consecutive year, UIC held its survey on HSE performance indicators at all member sites (about 1200). The number of sites responding to the survey is on the increase. Results are publicly available.

3 Communication with interested parties

Numerous local Responsible Care meetings were held in 2001, concentrating on implementation at local level and on experience sharing. UIC dedicated its national seminar in November 2001 to health issues: health of employees, local communities, and customers. This helped develop communication with interested parties inside and outside the industry.

4 Mutual assistance forums

The SMEs Awareness program managed by the regional UIC branches with expert support is ongoing: since 1999, more than 80 SMEs have taken advantage of this program.

5 Process to encourage full participation of association members

Responsible Care is not a condition of UIC membership but companies representing half of member sites and over 90% of French chemical industry turnover have signed up to the initiative. UIC continues to work on getting industry-wide support for Responsible Care, focusing in particular on SMEs.

6 Implementation assurance

UIC carried out the first self-assessment survey for all member sites in 2001. The questionnaire is based on the Cefic guide for federations. Main objectives were to help members determine Responsible Care strengths and weaknesses, and for UIC to identify the gaps and develop appropriate tools. Results analysis helps UIC define objectives for 2002.

Additional features

Local name Engagement de Progrès

Emergency distribution response scheme under the European ICE program.

GERMANY

Verband der Chemischen Industrie - VCI
Karlstrasse 21
D-60329 Frankfurt
Germany

Contact: Dr Petra Jeder
Tel: 49 69 255 6 1445
Fax: 49 69 255 6 1607
E-mail: jeder@vci.de
Web site www.vci.de
Adopted Responsible Care in 1991

Program description**1 Codes, guidance notes or checklists for implementation**

Product Stewardship - Process safety - Employee health and safety - Environmental protection - Distribution safety - Communication

2 Indicators of performance

VCI's annual Responsible Care report, published since 1996, contains quantitative IoPs including:

Air emissions - Waste generation - Water discharges - Water and energy consumption - Environmental protection costs - Product Stewardship - Occupational illnesses - Occupational accidents - Process safety - Distribution safety - Implementation of EMS - Environmental reports and statements.

3 Communication with interested parties

Over 40,000 copies of the 6th Responsible Care Report were distributed. Besides the six 'classical' chapters on Responsible Care the report includes articles on voluntary commitments and climate protection. Member companies issue Environmental Reports or Environmental Statements in line with EMAS. VCI's "Forum Future" events provide a platform for dialogue with external stakeholders, and there are conventions and seminars for science teachers.

4 Mutual assistance forums

Special help is directed at SMEs, which make up the majority of VCI members. Continued support has been provided for EU candidate countries with their Responsible Care programs.

5 Process to encourage full participation of association members

Responsible Care is a condition of VCI membership. Nearly 99% of the German chemical industry belongs to VCI. In 1999 the VCI Board asked CEOs of all VCI member companies for a written commitment to the Guiding Principles - over 70% of companies have signed up.

6 Implementation assurance

As well as collecting performance data, VCI began collecting self-assessment data from member companies in 2000 (based on Cefic criteria). Returns provided a representative picture (126 companies with 216,887 employees) and showed the need to improve communication and Product Stewardship efforts, which will be addressed in the next round of Responsible Care self-assessment.

Additional features

Local name Verantwortliches Handeln

Partnership agreement with chemical distributors association, VCH

National Emergency Response scheme, TUIS

SH&E voluntary agreements: some 30 agreements are in existence in Germany.

The German Chemical Trade Union (IG BCE), the VCI and German Federation of Chemical Employers Association (BAVC) work closely on Responsible Care under an agreement signed end 1999.

GREECE

Hellenic Association of Chemical Industries - HACI
23 Lagoumitzi Ave
176 71 Kallithea
Athens
Greece

Contact Panos Scarlatos
Tel: 301 921 3259
Fax: 301 921 3260
E-mail: hacci@ath.forthnet.gr
Adopted Responsible Care in 1995
Web site www.biznet.com.gr/industrial/haci

Program description**1 Codes, guidance notes or checklists for implementation**

Codes: Public awareness and emergency response - Waste management - Storage and distribution of chemicals - Process safety - Safety hygiene - Pollution control.

2 Indicators of performance

Energy use - Emissions to air and water - Occupational health and safety (9 IoPs in total)

3 Communication with interested parties

Close co-operation with authorities to promote environmental issues such as control and registration of chemical substances, the emergency distribution response program ICE, and the IPPC directive implementation. Some activities sponsored by HACI.

4 Mutual assistance forums

Working groups set up to help implementation.

5 Process to encourage full participation of association members

70% of member companies have signed the Guiding Principles.

6 Implementation assurance

No system in place.

HONG KONG SAR AND CHINA

Association of International Chemical Manufacturers - AICM
GPO Box 1607
Hong Kong

Contact: Judy Castledine
Tel: 852 2879 7332
Fax: 852 2802 1707
E-mail: castledine@idow.com
Web site: www.aicmasia.com (content under development)
Adopted Responsible Care in 1992

Program description**1 Codes, guidance notes or checklists for implementation**

Codes: Distribution and Product Stewardship available in Chinese and English. Additional codes will be developed 2002/2003.

2 Indicators of performance

AICM began collecting data in 1999/2000. To date, this has largely included personal safety data.

3 Communication with interested parties

Responsible Care in China and in Hong Kong SAR has been implemented through the multinational companies who are in China through joint ventures and 100% owned businesses. Many of these companies have signed on to Responsible Care at their home base and with AICM for HKSAR and Mainland China. AICM has held three Asia Pacific Responsible Care conferences in China: Hong

Kong, Beijing and Shanghai. AICM has continued to work with the Chinese industry to improve their knowledge of Responsible Care and to support them in their drive to improve EH&S performance. An example of this is that AICM has signed a Letter of Intent to work with the China Petroleum and Chemical Industry Association to jointly promote improvements in EH&S in China. AICM continues to look for opportunities to share out knowledge on Responsible Care and the safe management of chemicals with our Chinese counterparts. AICM has participated in numerous seminars, training session and conferences both as AICM and as member companies.

AICM continues to support the relevant Chinese government departments on the development and implementation of environment, health and safety laws relevant to the handling of chemicals. In December 2001, AICM co-sponsored with the State Administration of Work Safety and the Ministry of Communications a National Seminar on the Safe Transport of Chemicals.

The AICM Emergency Response Sub-committee has, on behalf of AICM and its members, been working with National Registration Center for Chemicals (NRCC). NRCC has been nominated by the State Economic and Trade Commission in China to set up a National emergency response plan. Together we have developed a protocol to support the improvement of emergency response information nationwide in the event of a transportation accident. NRCC will provide level one service to AICM members who sign the model agreement. This will be launched mid 2002.

4 Mutual assistance forums

A series of seminars have been held with government authorities and member companies on various aspects of transport safety. At one of these seminars there were more than 100 government officials and their invitees, more than 50 AICM members and 15 transport and warehouse companies. The topics ranged from regulatory requirements to accident statistics; to best practices; to use of hazard communication. A critical element in safe transport is the selection of the carrier that is used to transport chemicals and their safety performances. Topics included best practices in selection and how we need to work together to support the carriers in improving their performance in China. These seminars and other activities have enabled our AICM members and the government to share issues and concerns and work together to find solutions.

As part of AICM commitment to China, seminars are planned for 2002 to further introduce Responsible Care to management and EH&S functions in key Chinese companies.

AICM has committees to support its activities in addition to the overarching Responsible Care Committee. These include the emergency response sub-committee, the logistics committee (transport, warehousing and terminals), Regulatory Affairs and a number of task forces to address shorter-term issues. This way, information and mutual assistance is focused on the particular area of interest for an individual or company.

5 Process to encourage full participation of association members

Responsible Care is not a condition of membership in AICM, although members are encouraged to sign the Guiding Principles, and member companies have signed on in their home countries. AICM uses membership process and peer pressure to encourage commitment.

6 Implementation assurance

Implementation of this activity is in the AICM Responsible Care Objectives (3-5 years).

Additional features

AICM has a presence in China with an office in Beijing, staffed by a Chief Representative and an assistant. Close working relationships have been established with Chinese authorities and AICM's advice and support on Responsible Care and EH&S is welcomed.

HUNGARY

Magyar Vegyipari Szövetség - Mavesz
Erzsebet Kiralyné utja 1/c
H-1146 Budapest
Hungary

Contact Magda Bada Casper
Tel: 36 1 363 8362
Fax: 36 1 363 6680
E-mail: magda@mavesz.hu
Web site www.mavesz.hu
Adopted Responsible Care in 1992

Program description**1 Codes, guidance notes or checklists for implementation**

Codes: Community Awareness and Emergency Response - Research and development - Manufacturing - Transportation - Distribution - Hazardous waste.

Checklists: environmental protection, safety, occupational health, energy consumption, communication.

2 Indicators of performance

Air emissions - Water emissions - Waste generation - Energy use - Environmental investment - Lost time accidents.

3 Communication with interested parties

Many member companies hold Open Days and publish HS&E reports. MAVESZ organizes an annual Responsible Care workshop. Several meetings and workshops held on chemical safety and environmental protection as a result of new Hungarian legislation (in line with EU directives). Participation in the EU harmonized legislative procedures. Negotiations with national authorities on SEVESO II and IPPC directives.

4 Mutual assistance forums

Meeting programs for senior executives and Responsible Care coordinators. Companies working in small groups.

5 Process to encourage full participation of association members

Responsible Care is not a condition of membership but over 90% of members have signed up. Committed companies represent 75-80% of turnover of the Hungarian chemical sector. Encouragement comes mainly from peer pressure and promoting the benefits of Responsible Care.

6 Implementation assurance

Responsible Care commitments related to the management of the environment have been verified through ISO 14001 certification at the majority of Hungarian companies signed up to Responsible Care. Companies must complete a comprehensive questionnaire on HS&E performance every 2-3 years.

Additional features

Local name Felelős Gondoskodás

National emergency response scheme VERIK under which experts cooperate on minimising consequences/prevention of incidents during transportation of dangerous materials.

INDIA

Indian Chemical Manufacturers Association - ICMA
Sir Vithaldas Chambers,
16 Mumbai Samachar Marg Fort
Mumbai 400 023, India

Contact R R Gokhale
Tel: 91 22 204 8043
Fax: 91 22 204 8057
E-mail: icmawro@vsnl.com
Web site: www.icmaindia.com
Adopted Responsible Care in 1993

Program description**1 Codes, guidance notes or checklists for implementation**

Codes: Process safety - Employee health and safety - Pollution prevention - Emergency response - Distribution - Product safety.

2 Indicators of performance

Accident frequency rate - COD load - Solid waste generation - SO₂ generation.

3 Communication with interested parties

ICMA is continually interacting with regulatory bodies such as the Indian government's Ministry of Environment & Forests. ICMA has issued various publications in collaboration with MoEF for members and external stakeholders covering areas like emergency preparedness, and safe transportation of hazardous chemicals. ICMA encourages member companies to dialogue with local communities and groups such as students, teachers, local police etc.

4 Mutual assistance forums

Ongoing activities including Responsible Care Coordinators Group meetings at member companies' plant sites involving presentations on safety policies and Responsible Care briefings. ICMA organises various seminars and workshops for members.

5 Process to encourage full participation of association members

Commitment to Responsible Care is not an obligation of membership of ICMA; 76 companies have signed up to May 2002. Each year ICMA invites nominations for awards in different categories such as HS&E management, waste reduction, social awareness and responsibility etc. To be eligible for these awards, companies must be signatories to Responsible Care.

6 Implementation assurance

Self assessment reports have been obtained from Responsible Care companies. However, external auditing has not been introduced. ICMA is encouraging companies to obtain ISO 9000 & ISO 14000 certification.

INDONESIA

Komite Nasional Responsible Care Indonesia – KNRCI
c/o Asosiasi Produsen Pupuk Indonesia (Indonesian Fertilizer Producers Association)
PUSRI Building 6th Floor
Jalan Taman Anggrek Kemanggisian Jaya
Jakarta 11480, INDONESIA

Contact: Setyabudhi Zuber
Tel: 62 711 712 111 Ext 3487
Fax: 62 711 712 100 / 62 21 548 3313
E-mail: setyabudhi@pusri.co.id / KNRCI@pacific.net.id

Website: www.kn-rci.org

Adopted Responsible Care 1997
Accepted as RCLG member 1999

Program description**1 Codes, guidance notes or checklists for implementation**

Codes: Process safety - Community Awareness and Emergency Response (launched 1999); Pollution prevention - Transportation and distribution (2000) - Employee health and safety - Product Stewardship (2002).

2 Indicators of performance

Member companies' annual surveys track illness/injury rates, plant incidents, emission reductions, health, safety and environmental improvement programs.

3 Communication with interested parties

Presentations on Responsible Care and related topics at seminars / conferences of key government / community leaders as well as Ministry of Industry and Trade, Ministry of Health, Ministry of Manpower, Ministry of Environment, and Environmental Impact Management Agency (BAPEDAL). Community complaint resolution system in place. Formation of national and local Advisory Panels is underway with half-yearly meetings scheduled.

4 Mutual assistance forums

Meetings for CEOs and Responsible Care coordinators; workshops/training sessions on codes of management practice. Events included the 3rd Responsible Care Indonesia Seminar & Workshop, and a touring road show - Introduction to Responsible Care - attended by chemical companies and transport firms. KNRCI organized and hosted the 7th Asia Pacific Responsible Care (APRC) Conference in October 2001, in Bali. Because Indonesia is an archipelago consisting of thousands of islands and industry is widely spread, association coordinators have been appointed to supervise self-assessment programs and other Responsible Care activities for various industrial zones.

5 Process to encourage full participation of association members

Responsible Care is not an obligation of membership. Members encouraged to commit to Responsible Care through regular information, peer pressure and dialogue. By February 2002, 48 member companies had signed up. Members of the KNRCI - Indonesian Chemical Industries Club participate in reviewing the Codes of Management Practices and Responsible Care campaign.

6 Implementation assurance

Self-assessment on compliance with process safety, CAER and distribution codes is being started by member companies and data collected by the KNRCI in 2002. Member companies will complete self-assessment of all codes during 2004-2007, with external verification of compliance, and performance and results published by 2009. A detailed action program has been drawn up to achieve these targets.

Additional features

Guidelines for integration of Responsible Care with ISO 14001 and SMK3 (Employee Safety & Health Management System, established by the Indonesian government).

A Transportation & Distribution Emergency Response Committee has been set up by KNRCI to prepare an emergency response services provider in Indonesia.

IRELAND

The Irish Pharmaceutical & Chemical Manufacturers Federation - IPCMF
Confederation House
84/86 Lower Baggot Street
Dublin 2
Ireland

Contact Marion Byron
Tel: 353 1 605 1624
Fax: 353 1 638 1624
E-mail: marion.byron@ibec.ie
Adopted Responsible Care in 1992

Program description**1 Codes, guidance notes or checklists for implementation**

Codes: Environment practice - Process safety - Distribution. Codes have been revised and updated to take account of new legislative and best practice requirements.

2 Indicators of performance

All companies are required to report accident, occupational illness and environmental performance data. This data is used to benchmark performance against industry and European standards. Data collected over the previous years is being assessed to demonstrate performance in health, safety and environmental management.

3 Communication with interested parties

It is federation policy to establish collaborative fora with public and regulatory agencies on environmental issues. This exercise is seen as being vital for ensuring long-term confidence in the industry and its commitment to Responsible Care. The EPA has indicated that the performance of the pharmaceutical industry in Ireland is good overall, with high levels of compliance with license requirements.

4 Mutual assistance forums

Steering group meets regularly to define Responsible Care work program. Responsible Care coordinators working group meets twice a year to review implementation issues and identify actions. Four local mutual assistance cells operate in areas with a large concentration of chemical facilities.

5 Process to encourage full participation of association members

Commitment to Responsible Care is a condition of IPCMF membership. The membership represents over 80% of Irish chemical production.

6 Implementation assurance

No formal verification system is in place; all companies committed to Responsible Care have mandatory reporting requirements under existing environment and health and safety legislation. Under the EPA's Integrated Pollution and Control legislation companies must put in place and operate an environmental management system and outline a program for continuous improvement. The EPA audits environmental performance on an annual basis. This is a publicly acceptable mechanism for external verification. However, it is IPCMF's intention to carry out independent audits against the Responsible Care Guiding Principles.

Additional features

Partnership agreement signed in 1997 with the Irish Chemicals Marketers Association to implement Responsible Care.

ISRAEL

Manufacturers' Association of Israel /Chemical, Pharmaceutical & Environmental Society - MAI
Industry House
29 Hamered Street
Tel Aviv 68125
Israel

Contact: Dov Basel
Tel 972 3 519 8868
Fax 972 3 519 8718
E-mail: dovb@industry.org.il
Web site: www.cpc.org.il/RC
Adopted Responsible Care in 2001

Program description**1 Codes, guidance notes or checklists for implementation**

Codes: Pollution prevention (in place)
Employee health and safety - Process safety (by end 2002)
Distribution code - Product Stewardship - Community awareness and emergency response (by end 2003)

2 Indicators of performance

SO_x, NO_x, CO₂ emissions - Energy consumption - Distribution incidents - Hazardous waste
Additional IoPs scheduled to be in place by end 2002.

3 Communication with interested parties

MAI's Chemical, Pharmaceutical & Environmental Society participates in all SHE governmental legislation procedures through public committees. The society operates all MAI Environmental Committees for other industry sectors and is responsible for coordination of joint teams from industry and the authorities seeking solutions to ecological problems. The society runs 6 educational centres for children.

4 Mutual assistance forums

The Society is holding regular meetings to familiarize member companies with Responsible Care. Latest meetings focused on members' commitment, reports to MAI, verification, codes implementation and guidance.

5 Process to encourage full participation of association members

Responsible Care is not an obligation of membership but all major company CEOs are on board. The MAI board approved Responsible Care in 2000 and Israel was accepted for membership by ICCA in 2001. The commitment process is still at an early stage but 20 companies have signed up including Israel Chemicals Ltd, the country's leading chemicals producer with about 25% of total sales and employees.

6 Implementation assurance

Through self-assessment process backed up by regular visits to member companies.

Additional features

A voluntary agreement between the Ministry of the Environment and the Manufacturers Association covers air pollution reduction. Most member companies have signed the covenant, and committed to emission standards and reduction targets.

The society is responsible for operation of the Israeli Cleaner Production Centre
By-laws for Responsible Care membership acceptance agreed.

ITALY

Federazione Italiana dell'Industria Chimica - Federchimica
Via Giovanni da Procida 11
20149 Milan
Italy

Contact Giuseppe Astarita
Tel: 39 02 3456 5357
Fax: 39 02 3456 5329
E-mail: tes1@federchimica.it / g.atarita@federchimica.it
Web site www.federchimica.it
Adopted Responsible Care in 1992

Program description**1 Codes, guidance notes or checklists for implementation**

Checklists: Emergency management in chemicals transportation
- Safety at work: emergency response - Emergency management in chemicals use

Guidelines: Environmental reporting - Communication of Responsible Care - Reducing emissions - Plant safety - Risks of major accidents - Crisis management - Integrated safety, health and environment management system

2 Indicators of performance

Nearly 30 separate IoPs including lost time accidents and severity index for contractors - Number of plants/companies with ISO and EMAS certifications - Clean processes and products - Number of interventions by transport emergency service - Transport accidents

Responsible Care Report includes IoPs based on the Cefic 1998 HSE Reporting Guidelines.

3 Communication with interested parties

Various publications including Responsible Care newsletter and annual Environmental Report which is presented to and discussed with external stakeholders. Open Door Days, organized on a national basis since 1987, involved 85 sites in 13 regions out of 20 during 2000. A database providing information on chemical sites (access routes, site characteristics, etc) has been set up in cooperation with the Milan Province fire brigade to improve emergency response.

4 Mutual assistance forums

Responsible Care meetings organized at least quarterly. Responsible Care coordinators committee meets half yearly at Federchimica. Various events organized to share views and exchange experiences on implementation. Seminars on plant safety and public information on major accidents, and training exercises on crisis management held since 1997.

5 Process to encourage full participation of association members

Responsible Care is not an obligation of membership. More than 160 companies are committed to Responsible Care representing about 45% of national chemical industry turnover (including pharmaceutical sector). Special assistance on Responsible Care offered to SMEs eg presentations to staff by the association, and site audits for SH&E management systems.

6 Implementation assurance

After the 1999 self-assessment survey, results were communicated and discussed with Responsible Care coordinators. Another survey planned for 2002 is based on a checklist from the Management Guidance on Responsible Care, presented to stakeholders in July 2001.

Additional features

Local name L'impegno dell'industria chimica per l'ambiente, la sicurezza, la salute.

Responsible Care Partnership Agreement in place with AssICC, the Italian Chemical Distributors Association.

SH&E voluntary agreements under discussion with Ministry of Environment to reach Kyoto objectives and improve recognition of Responsible Care.

The Transport Emergency Service has been strengthened by the participation of Trenitalia, the national railway company.

JAPAN

Japan Responsible Care Council - JRCC
c/o Japan Chemical Industry Association (JCIA)
Kazan Building, 3-2-4 Kasumigaseki
Chiyoda-ku, Tokyo 100-0013
Japan

Contact: Reiko Nonaka (Ms)
Tel: 81 3 3519 2125
Fax: 81 3 3580 0970
E-mail: rnonaka@jcia-net.or.jp
Web site: www.nikkakyo.org/organizations/jrcc/index.html
Adopted Responsible Care in 1990

Program description**1 Codes, guidance notes or checklists for implementation**

Codes: Implementation of Responsible Care
Responsible Care code consisted of: Environmental preservation - Process safety and disaster prevention - Occupational health and safety - Chemical and product safety - Distribution safety - Social dialogue - Management System (issued in 2002).

Responsible Care Guidelines for establishing programs and reporting on progress; submitting implementation report and plan; conducting internal audit; preparing performance data

2 Indicators of performance

Major indicators include: Environmental preservation (industrial waste volumes, energy consumption, CO2 emissions, emissions of specified substances under the PRTR Law, emissions of air pollutants and SOx, NOx and dust, COD emissions) - Investment in environmental preservation - Process safety and disaster prevention (plant accidents) - Occupational health & safety (frequency rate and severity rate)

3 Communication with interested parties

The JRCC's National Advisory Panel has 13 members representing various stakeholders. The panel meets at least once a year to review JRCC activities and provide input to the Council.

Regional dialogue meetings in 11 districts throughout Japan, including the nine major petrochemical complexes, are held every two years. Participants include labour unions, neighbouring enterprises, local governments, schoolteachers and community residents. Round table discussions with consumer representatives are held periodically; recent topics include PRTR and risk communication. Dialogue and interaction with the International Association of students in Economics and Business Management (AIESEC) was launched in 2001.

JRCC also maintains a communication channel on Responsible Care, HS&E and ICCA issues with labour unions through the JCIA's Employers and Employee's Representative Dialogue Meetings.

The annual Responsible Care report is distributed to about 700

organizations; annual report meetings are held in Tokyo and Osaka every year.

4 Mutual assistance forum

Annual and six-monthly member experience exchange meetings and workshops promote mutual assistance among member companies. The experience exchange meeting involves lectures and several sessions to improve Responsible Care with recent topics including PRTR/MSDS, communicating with the public and NGOs, verification etc. Workshop topics in 2001 included environmental reporting and environmental accounting.

5 Process to encourage full participation of association members

The number of the JRCC member companies has increased from 74 in its launch year, to 112 by May 2002. This accounts for an estimated 70% of Japanese chemical shipments and 87% of the workforce.

6 Implementation assurance

JRCC's 2001 survey based on self-assessment results showed 90% of reporting member companies have Responsible Care management systems and 81% have established internal Responsible Care audit systems.

JRCC launched a new Responsible Care verification process in April 2002 after pilots at four member companies in 2001. Verification is carried out by peer review, not third party. The process is not mandatory but JRCC has asked members to put themselves forward for verification over the next three to five years. Companies can nominate the areas for inspection from among the seven evaluation modules corresponding to the new codes listed above (point 1).

Additional features

One of the major aims of the new verification process is to raise the level of Responsible Care at member companies by evaluating activities against a set of new codes (see point 1). This enables companies to identify areas of weakness and highlight best practices. Another objective is to secure the transparency of Responsible Care initiative by publicizing the names of participating companies. JRCC has prepared a special training program for verifiers who are drawn from industry experts.

A Verification Advisory Committee was set up in March 2002. Committee members are involved with external stakeholders, including representatives from academia, labour unions, consumer groups and downstream users. The role of the committee is to monitor the operation of the verification process, provide recommendation for its improvements, and participate in the verifier accreditation process (see point 6).

MALAYSIA

Chemical Industries Council of Malaysia - CICM
Wisma FMM, No. 3 Persiaran Dagang PJU 9
Bandar Sri Damansara
52200 Kuala Lumpur
Malaysia

Contact : Chan Pek Wan
Tel : 603 6276 1211
Fax : 603 6277 6714
E-mail : pek_wan@fmm.org.my
Website : www.cicm.org.my
Adopted Responsible Care in 1994

Program description**1 Codes, guidance notes or checklists for implementation**

Codes: Distribution - Community Awareness and Emergency Response - Pollution prevention - Process safety - Employee health and safety - Product Stewardship.

2 Indicators of performance

CICM has developed ten core parameters:
SHE organisation and management - Safety and occupational health monitoring - Communication and community awareness - Waste management - Air emissions - Water discharges - Use of natural resources and energy - Energy and water saving - Distribution incidents - Publicity and training - SHE spending.

3 Communication with interested parties

Individual member companies hold open days to communicate with the local community and officers of regulatory bodies. Representatives from member companies have visited colleges to make presentations to students on opportunities in the chemical industry. Good links have been forged with Government departments, the Institute of Engineers and the National Institute of Occupational Safety and Health (NIOSH), and have resulted in joint seminars and talks.

4 Mutual assistance forums

CICM holds industry roadshows, workshops, etc for members. Training and awareness efforts are a continuous and on-going activity with at least three workshops on the Codes of Management Practices targeted annually. Regional cells or branches also conduct various activities with assistance from CICM Responsible Care headquarters.

5 Process to encourage full participation of association members

At present Responsible Care is not a condition of membership. At the launch of Responsible Care in 1994, 33 out of a total membership of 72 signed up; as of March 2002 there were 75 signatories. Main process is peer pressure, together with personal contacts by members with neighbouring companies and suppliers. Multinational member companies require local sub-contractors and suppliers to comply with Responsible Care before being approved. CICM's pro-active approach of staying ahead of national legislation has increased participation in Responsible Care.

Exchange of site visits amongst signatories has provided an opportunity to identify problems and benefits of Responsible Care. Non-signatory companies are invited to participate in Responsible Care Co-ordinators' get-together activities.

6 Implementation assurance

Annual self-assessment forms on each code are sent to members to record implementation progress. Results have been recorded and progress monitored.

Additional features

CICM launched a Responsible Care Awards scheme in March 2002 as a means of recognizing the achievements of signatories in implementing the six Codes of Management Practices, and to reaffirm its commitment to improve in the areas of safety, health and environmental protection.

MEXICO

Asociación Nacional de la Industria Química AC - ANIQ
Providencia # 1118
Col. del Valle
C.P. 03100 México DF
México

Contact: Alejandro Lorea Hernández
Tel: 52 55 5230 51 31 or 52 55 5230 51 00
Fax: 52 55 5559 2208 or 52 55 5230 5107
E-mail: alorea@aniq.org.mx
Web site www.aniq.org.mx
Adopted Responsible Care in 1991

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Pollution prevention - Process safety - Employee health & safety - Community Awareness and Emergency Response - Transportation and distribution - Product Stewardship.

ANIQ's Health and Safety Committee has reviewed each Code of Management Practice. The Committee has developed a checklist of actions required by companies in order for them to obtain full implementation in each management practice.

2 Indicators of performance

Some IoPs under development. During 2001, ANIQ published the following: Water consumption - Wastewater generation - Hazardous waste generation - Lost time injury frequency rate

3 Communication with interested parties

Communications strategy is under development.

4 Mutual assistance forums

Small groups work together on a Local Information Exchange Program, organize meetings etc. ANIQ has set up working groups of Responsible Care coordinators by sector and they share information to improve HSE activities. Workshops dedicated to specific codes.

5 Process to encourage full participation of association members

Responsible Care is a condition of membership. ANIQ will seek government recognition for those companies with outstanding performance through Responsible Care implementation. ANIQ has introduced an annual Responsible Care Award as an incentive to companies achieving good implementation levels. Certain conditions must be met each year before companies can use the Responsible Care logo. These are: consistency in reporting annual self-evaluations and showing a percentage of improvement better than the industry average. CEOs from big companies encourage SMEs to implement Responsible Care, some of them through implementation of the Product Stewardship code.

6 Implementation assurance

In 2000, ANIQ members started verification audits performing either an internal company audit or an internal ANIQ audit. Third party verification is planned to start in 2003. Member company employees who were trained as company verifiers have done some verifications in their companies since 2000. Using external resources, ANIQ is supporting companies that have not started Responsible Care implementation or are showing little progress to carry out an initial assessment and set specific work plans. 27 companies have been supported in this way since 2000. ANIQ has carried out an annual analysis of the self-evaluation data and developed a continuous improvement plan for helping companies improve their codes performance since 2000.

Additional features

Local name Responsabilidad Integral

Emergency distribution response scheme: SETIQ

SH&E voluntary agreements: The Program for Environmental Protection and Competitiveness (1995) signed between Mexican CIB, Ministries of Environment and Industrial Development and Commerce.

MOROCCO

Fédération de la Chimie et de la Parachimie (FCP)
Lotissement KAMAL n°6-Ain Sebaâ
20250 Casablanca
Maroc

Contact Mustapha Ghayor

Tel: 212 2 664161

Fax: 212 2 354 96

E-mail: fcpmar@marocnet.net.ma

Adopted Responsible Care in 1998

Program description

1 Codes, guidance notes or checklists for implementation

Codes under development: Transportation - Pollution prevention

2 Indicators of performance

Accident rate - Energy consumption [2] - Water consumption - Waste generation 2 additional IoPs under development.

3 Communication with interested parties

Performance data gathered from members communicated to the press and the authorities. Responsible Care activities publicized at FCP annual meetings and annual workshops.

4 Mutual assistance forums

National committee actively assisting member companies in Responsible Care implementation. Annual Responsible Care workshop involved participation of and experience sharing by Cefic and French association UIC.

5 Process to encourage full participation of association members

Responsible Care commitment is not a condition of membership. 23 companies representing around 60% of the turnover of the Moroccan chemical industry are presently committed to Responsible Care.

6 Implementation assurance

An Action Plan has been developed with the assistance of the FCP Responsible Care Committee to ensure implementation in companies signed up to Responsible Care. Progress reported at monthly meetings. 2002 work plan includes program of visits to members to check on implementation.

NETHERLANDS

Vereniging van de Nederlandse Chemische Industrie - VNCI
Vlietweg 16, Postbus 443
2260 AK Leidschendam
The Netherlands

Contact Erwin von der Meer

Tel: 31 70 337 8742

Fax: 31 70 320 9418

E-mail: vondermeer@vnici.nl

Web site www.vnici.nl

Adopted Responsible Care in 1990

Program description

1 Codes, guidance notes or checklists for implementation

Guidance for implementation - Product Stewardship - Self-assessment questionnaire - SQAS (distribution) - Safety Checklist Contractors - Communications plan for companies

2 Indicators of performance

Annual Responsible Care report documents a comprehensive range of IoPs eg 37 for air and 35 for water. VNCI is also evaluating safety and energy consumption. From 2001 VNCI requires member

companies' data on emissions reductions, transport incidents, LTR and fatalities including contractors.

3 Communication with interested parties

Responsible Care Committee includes ex-government ministers, politicians, environmentalists, journalists, CEOs and scientific research institute. Many companies have set up local Community Advisory Panels. Annual Responsible Care Progress Report. Open Day (every two years since 1978). Revisions to Responsible Care in 2001 now requires companies to prepare communications plans and submit to VNCI for advice/approval.

4 Mutual assistance forums

VNCI sponsors Responsible Care seminars and conferences for members. As a result of increasing demand by members with international activities, VNCI's Environmental Burden method showing impact of emissions was translated into English in 2001. Based on self-assessment results, workshops held during 2001 focused on Product Stewardship and communication.

5 Process to encourage full participation of association members

Responsible Care commitment is not a condition of membership. The number of signatories in 2000 was 129, representing more than 85% of Dutch chemical production.

6 Implementation assurance

Responsible Care self-assessment has been made obligatory; around 90% of companies participated in 2001. Organisation of Responsible Care peer reviews began in 2000. Evaluation of the experience derived from these reviews will help decide whether to continue. Verification of Responsible Care will be postponed to the near future.

Additional features

Currently there is one formal Responsible Care partnership with The Dutch Chemical Trade Association that began in 1997. The Dutch Association of Paints and Varnishes (VWF) is an associated member of the VNCI and is implementing its own Coatings Care initiative which has many similarities to the VNCI Responsible Care program.

Voluntary agreements with Government on:

- improving energy efficiency
- implementing environmental measures for companies to achieve goals with the help of VNCI guidance
- achieving targets for prevention/reduction of packaging materials with the help of VNCI guidance

NEW ZEALAND

New Zealand Chemical Industry Council Inc - NZCIC
Level 1, Agriculture House
12 Johnston Street
PO Box 5069
Wellington
New Zealand

Contact: Barry S Dyer

Tel 64 4 499 4311

Fax 64 4 472 7100

E-mail: nzcic@attglobal.net

Web site: www.nzcic.org.nz

Adopted Responsible Care in 1991

Program description

1 Codes and guidance documentation

The NZCIC has developed the Responsible Care Management

System, which is explained in the Responsible Care Manager's Handbook, an integrated compendium of national safety, health and environmental (SH&E) performance standards, codes of practice and audit system enabling compliance with New Zealand's demanding workplace safety and environmental protection legislation.

This includes the performance standards necessary to progressively implement New Zealand's Hazardous Substances Regulations, which reflect the Global Harmonisation System (GHS) for the Classification and Labelling of Chemicals.

2 Indicators of performance

The Responsible Care Management System includes regulatory workplace injury and environmental performance reporting requirements. The NZCIC's two tier PRINCE© site accreditation scheme assesses compliance with SH&E protection legislation and recognises superior SH&E performance. PRINCE© accreditation is available to both members and non-members. Future national environmental performance assessment and reporting requirements are being progressively incorporated.

3 Communication with interested parties

The NZCIC is widely recognised as a prime source of credible technical advice to government, industry, enforcement authorities and the community. The Council hosts multi-disciplinary working groups developing national and international SH&E performance standards.

NZCIC conferences and workshops provide a non-partisan forum for government, trade associations, unions and enforcement authorities to discuss SH&E protection policies and performance standards.

Individual member companies maintain close links with the local community. The NZCIC provides free technical advice and the CHEMCALL© emergency response service to schools, hospitals, the emergency services and enforcement agencies.

The Council's web site includes a section dedicated to explaining to the public how to manage hazardous substances.

4 Mutual assistance forums

The NZCIC hosts public seminars on topical issues such as new SH&E protection regulations, plus technical workshops for Responsible Care co-ordinators and enforcement authorities. Members provide assistance to less well-resourced companies to improve SH&E performance. The Council participates in international chemical association initiatives, particularly Asia Pacific Responsible Care conferences and strives to help regional chemical associations successfully implement Responsible Care. ICCA members and international regulatory authorities will benefit from New Zealand's experience with implementing the GHS.

5 Process to encourage full participation of association members

NZCIC membership represents approximately 90% of the major chemical suppliers. Commitment to Responsible Care is a condition of membership. PRINCE© accreditation is required to use the Responsible Care logo. The Council encourages site accreditation and implementation of Product Stewardship initiatives to reach an increasing range of suppliers, distributors and major users of hazardous substances. The NZCIC co-operates with enforcement agencies to achieve public recognition for PRINCE© accreditation including helping to improve standard performers.

6 Implementation assurance

New Zealand introduced PRINCE© performance assessments in 1996. PRINCE© accreditation, valid for 12 - 30 months, is increasingly recognised by enforcement authorities and the pub-

lic as evidence of superior SH&E performance and compliance.

Additional features

NZCIC membership comprises approximately 90% of the major suppliers of hazardous substances (including chemicals), together with an increasingly diverse range of major hazardous substances users including transport operators, retailers, waste disposal companies, the Armed Forces, hospitals, and schools. The NZCIC has Partnership agreements with the Animal Health and Crop Protection Association, Independent Cropcare Distributors, the Department of Conservation, Logistics and Transport New Zealand and the New Zealand Fire Service. Under the brand "Responsible Care New Zealand", the association develops and delivers products and services designed to facilitate regulatory compliance and support Responsible Care initiatives.

The Council's national 24 hour, 365 day emergency response service (0800

CHEMICAL©) provides timely and credible technical advice to industry, the emergency services, schools, enforcement agencies and the community.

Together with the Plastics and Chemical Association of Australia (PACIA), the NZCIC seeks to harmonise trans-Tasman chemical control regulations and SH&E performance standards, including mutual recognition of accreditation initiatives.

Current projects include developing the national codes of practice required to implement the new Hazardous Substances Regulations incorporating the GHS.

NORWAY

Federation of Norwegian Process Industries - PIL

P.O. Box 5487 Majorstua

N-0305 Oslo

Norway

Contact Sverre Alhaug Hostmark

Tel: 47 23 08 78 75

Fax: 47 23 08 78 99

E-mail: sverref@pil.no

Web site www.pil.no

Adopted Responsible Care in 1993

Program description

1 Codes, guidance notes or checklists for implementation

Guidance: Pollution prevention - Process safety - Employee health and safety - "How to be a Responsible Care company". Various "Green papers"

2 Indicators of performance

Total recordable injury rate - Lost time injury rate - Lost workdays due to injuries - Fatal accident rate - Near misses rate - Fires, explosions & other major material damage - Sick leave/duration - Work related illnesses - Energy consumption - Waste production - Water consumption - Emissions (various)

3 Communication with interested parties

Publication of a comprehensive annual report, The Environment and Society. Individual companies sponsor open days, meetings with local communities and publish annual environmental reports. Some sites have joint projects with the local community.

4 Mutual assistance forums

PIL committees and advisory boards meet regularly and provide opportunities for companies to share best practices and

Responsible Care implementation information. A program of workshops and seminars covers a range of topics. Association web site provides SH&E performance data for all member companies.

5 Process to encourage full participation of association members

Responsible Care is not a condition of membership, and peer pressure is the primary means of encouraging companies to participate in Responsible Care. Around 215 companies, representing about 55% of the total number of chemical industry employees within PIL, have signed the guiding principles.

6 Implementation assurance

Implementation assurance is based on the following:

- Return of statistical information on extensive list of HS&E-parameters
 - Publication of an annual HS&E annual report, distributed to the local community
 - Annual report to the federation on site- and company-specific contact information and bi-annual self-assessment questionnaire rating degree of Responsible Care implementation.
 - Participation in experience-sharing events for the sector
 - Active use of the Responsible Care logo within ICCA guidelines.
- Companies failing to fulfill the first 3 bullet-points will lose their right to refer to themselves as Responsible Care sites if, after having been warned for 2 consecutive years, the federation sees no significant change.

The new basic principles from 1999 state that sites shall have a documented SH&E management system and encourages EMAS and ISO 14000-series. As these systems cover all aspects of the site, a site's Responsible Care commitment is inspected as part of the audit.

Additional features

The local name MIA was changed to Responsible Care in 1999

PIL membership is broader than most chemical associations and includes laundry and cleaning, and waste recycling sectors among others.

Partnership Program: the Norwegian Chemical Suppliers Association.

SH&E voluntary agreements with government cover waste reduction (packaging sector), reduction in greenhouse gas emissions (aluminum), SO₂, reduction in sick leave (all sectors).

PERÚ

Comité de la Industria Química de la Sociedad Nacional de

Industrias - CIQ-SNI

Los Laureles 365-San Isidro

Lima 27

Perú

Contact: Malena de Silva

Tel: 51 1 441 2772

Fax: 51 1 441 2772

E-mail: mdesilva@sni.org.pe

Adopted Responsible Care in 1996

Program description

1 Codes, guidance notes or checklists for implementation

Existing Codes: Employee health and safety - Environmental protection - Process safety - Transportation and distribution

Under development: Community Awareness and Emergency Response - Product Stewardship

2 Indicators of performance

Air emissions - Waste management - Energy use - Lost time accidents - Transport accidents.

CIQ-SNI has been collecting annually IoPs since 1998.

3 Communication with interested parties

CIQ-SNI is initiating a communications plan on health, safety and environmental matters with interested parties inside and outside the industry. First annual 'Responsible Care and the Environment' Working Day held September 1999 expanded on local efforts and attracted community representatives. A Responsible Care video is available for use by CIQ-SNI and members to internal and external audiences. The communications effort is also supported with brochures and other publications.

4 Mutual assistance forums

CIQ-SNI holds regular meetings for Responsible Care coordinators of member companies. The association is setting up working groups of Responsible Care coordinators by sector. Groups have also been set up to exchange ideas and experiences.

5 Process to encourage full participation of association members

Responsible Care is not a condition of membership of CIQ-SNI. Peer pressure and communication of the benefits of Responsible Care are the main means of encouraging companies to commit to the initiative. By July 2001, 30 major companies had signed up, representing 69% of CIQ-SNI membership.

6 Implementation assurance

Each code has a self-assessment process. CIQ-SNI collects and analyzes members' self-assessments and provides assistance for implementation. The self-assessments are an important tool to help the association verify implementation of the practical elements of Responsible Care by member companies.

Additional features

Local name "Programa de Conducta Responsable con el Medio Ambiente" (PCRMA)

PHILIPPINES

Chemical Industries Association of the Philippines - SPIK

Unit 2201 Cityland 10 Tower 1

6815 Ayala Avenue North

Makati City 1226

Philippines

Contact Eduardo Abacan/Tessie Corpuz

Tel: 632 812 9854

Fax: 632 814 0970

E-mail: spik@pacific.net.ph

Website: www.spik-ph.org

Adopted Responsible Care in 1996

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Community Awareness and Emergency Response - Pollution prevention - Process safety - Distribution - Employee health and safety - Product Stewardship
New Responsible Care manual published in 2001 with guidance on implementation

2 Indicators of performance

In planning stage; due to be defined during 2002/3.

3 Communication with interested parties

Responsible Care was presented in four different regions of the country at the invitation of the Environmental Management Bureau

(EMB) of the Dept. of Environment and Natural Resources. This presentation forms part of the government-training program on the management of chemicals for both their regulatory officers and industry participants, including the mining, food, electronics, packaging, and consumer goods sectors. The Council is working with the government's EMB on inclusion of Responsible Care in the proposed Administrative Order on "Guidelines to Allow Regulatory Incentives and Flexibility to Industrial Establishments and to Strengthen Enforcement Capability". This would enable signatories to enjoy regulatory flexibility. Responsible Care awareness seminars were held for students and faculty of the University of Santo Tomas and the Asian Institute of Management (AIM). Plant visit to Bayer Philippines was facilitated to showcase Responsible Care. The Philippine Association of Paint Manufacturers also invited the Council to present Responsible Care. Section on Responsible Care included in SPIK website.

4 Mutual assistance forums

Updates of Responsible Care activities presented during general membership meeting, monthly directors' meeting. Council assistance offered to member companies. Seminars covering various topics including regulatory issues. Application for grant from Japan's JETRO to help implement Responsible Care was approved. Training and advice provided by Japanese expert.

5 Process to encourage full participation of association members

Commitment to Responsible Care is not a condition of SPIK membership. At mid 2002, 41 companies out of a total membership of 72 had signed up.

6 Implementation assurance

Special seminars during 2001 focused on implementation of the six Responsible Care codes and participants carried out self-assessment using new checklist. Results report given to CEOs of participating companies. Results provide baseline for companies to track progress of Responsible Care.

POLAND

Polish Chamber of Chemical Industry, Employers' Organization - PIPC-ZP

Ul. Czackiego 15/17, 00-043 Warszawa, Poland

Responsible Care secretariat located at Chemeko Sp. z o.o.

Ul. Torunska 222, 87-805 Wloclawek, Poland

Contact : M Rebski

Tel: 48 54 237 2453

E-mail: marcin@chemeko.pl

Website: www.rc.com.pl

Adopted Responsible Care in 1992

Program description

1 Codes, guidance notes or checklists for implementation

Employee health and process safety - Distribution safety - Product stewardship - Harmonization of national environmental law with EU directives

2 Indicators of performance

Environmental penalties - Emissions (various) - Waste generation - Administration's environmental use permits - Emergency response plan - Risk analyses/Safety reports - Accident indicators - Water consumption

3 Communication with interested parties

Most companies committed to Responsible Care have held an open day and have published SH&E newsletters for their local

community. Many companies now publish annual environment reports, which are distributed to local authorities and communities. Responsible Care Secretariat participates in international environmental fair and trade conferences to present implementation efforts of member companies. Annual national conference, Environmental Achievements in the Chemical Industry, brings together local authorities, Ministry of Environment representatives, and representatives of member companies, universities, technical academies and local communities.

4 Mutual assistance forums

Regular training workshops. Various publications and information exchange (INFO-NET system) via website for Responsible Care members. New CD-ROM on Responsible Care.

5 Process to encourage full participation of association members

Responsible Care is not an obligation of PIPC membership. 26 companies have signed up, including three chemical distributors.

6 Implementation assurance

Responsible Care certification is carried out based on PIPC-ZP guidance and in line with Responsible Care principles and standards. Four companies had been certified by end April 2001. The questionnaire was developed by the Responsible Care Secretariat based on the self-assessment questionnaire format and is different for producers and distributors. Process includes verification of Responsible Care management system.

Additional features

Local name Odpowiedzialność i Troska

Membership is broader than many chemical associations, including paints and varnishes, cosmetics, research, trade, engineering and consulting groups, for example.

PORTUGAL

Associação Portuguesa das Empresas Químicas - APEQ

Avenida D. Carlos I, No. 45-3

P - 1200-646 Lisboa

Portugal

Contact Lubelia Penedo

Tel: 351 21 393 2060

Fax: 351 21 393 2069

E-mail: lpenedo@apequimica.pt

Web site www.apequimica.pt

Adopted Responsible Care in 1993

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Pollution prevention - Community Awareness and Emergency Response - Distribution - Product Stewardship - Process safety - Employee health and safety - Communication. Checklist introduced in 1997.

2 Indicators of performance

Accident frequency, severity rate, accident incidence rate, costs related to safety and environment - Health: noise levels and cost related to health - Emissions to air and water, waste recycling, hazardous and non-hazardous for disposal - Water and energy consumption. 45 IoPs in total

3 Communication with interested parties

Meetings to communicate Responsible Care to local authorities, institutions and schools have been organized and the first community panel, PACOPAR, has been set up with a four-year action program.

4 Mutual assistance forums

On-site Responsible Care coordinators meetings promote experience sharing. Regular Responsible Care / HS&E seminars and workshops cover pollution prevention, performance indicators and emissions monitoring. News and information published in bimonthly publication. APEQ has published a comprehensive Responsible Care manual.

5 Process to encourage full participation of association members

Responsible Care is not an obligation of APEQ membership. 29 major companies are signed up, representing about 80% of the total sales volume of the chemical industry. APEQ's goal is to involve all its members in Responsible Care and a partnership agreement with the national distribution association is due for signing.

6 Implementation assurance

Most APEQ Responsible Care signatories are international companies participating in external environmental audit schemes involving verification of management systems.

Additional features

Local name Actuação Responsável.

Voluntary agreement between APEQ, associated companies and the Ministries of Environment and Economy (Industry) is ongoing; industry is ensuring its advocacy on regulations and public policy issues is consistent with Responsible Care.

An integrated local Emergency Response system has been set up since 2000.

SINGAPORE

Singapore Chemical Industry Council - SCIC

c/o Singapore Confederation of Industries

1 Science Centre Road

The Enterprise #02-02

Singapore 609077

Contact: Trina Neo

Tel: +65 6826 3031

Fax: +65 6822 8323

E-mail: trinaneol@scic.org.sg

Web site: www.scic.org.sg

Adopted Responsible Care in 1990

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Community Awareness and Emergency Response - Pollution prevention - Process safety - Distribution - Employee health and safety - Product Stewardship.

2 Indicators of performance

SCIC does not collate IoPs. However, at national level, the Ministry of Environment and Ministry of Manpower monitor HS&E indicators through mandatory reporting of serious incidents covering industrial safety, occupational illness and environmental non-compliance. Members collect and monitor their own HS&E indicators to meet corporate policy requirements, if any, or as part of their commitment to continuous improvement through adopting standards such as ISO 14000.

3 Communication with interested parties

Under the ongoing Educational Outreach Program implemented in 1998, industry 'ambassadors' are invited to give presentations to schools covering information on chemical products, how to handle chemicals safely and Responsible Care. To ensure the continuity of

the program, SCIC and JTC Corporation are developing an updated Outreach Program, which will enable students and community representatives to visit ChemGallery, a special exhibition Centre on Jurong Island which showcases the petroleum, petrochemical, and chemical industries, and to tour chemical plants on the Island.

4 Mutual assistance forums

Responsible Care for the Future Workplace was the theme of the first joint seminar held by the National Trade Union Congress and SCIC in July 2001. The aim of the seminar was to share Responsible Care principles with union members. More than 250 management staff and union members from the chemical and petroleum industry participated. Companies shared their Responsible Care experiences on such topics as personal safety, risk assessment, and risk control. The seminar was co-hosted by the affiliated unions and the Ministry of Manpower.

5 Process to encourage full participation of association members

Responsible Care is not an obligation of membership in SCIC. To recognize leaders of Responsible Care in Singapore, SCIC and DuPont Singapore Pte Ltd jointly sponsored and established the SCIC Responsible Care Award program in 2001. This is an effort by the SCIC Responsible Care Committee to reward Responsible Care signatories and increase participation by non-signatories.

6 Implementation assurance

SCIC requests Responsible Care signatories to return self-evaluation forms for collation and analysis. The most recent was collected in Oct 2001 with about 30 companies (around 50%) responding.

SLOVAK REPUBLIC

Zväz chemického a farmaceutického priemyslu - ZCHF

Association of Chemical and Pharmaceutical Industry of the

Slovak Republic

Drienova 24

826 03 Bratislava

Slovak Republic

Contact Silvia Surova

VUP a.s

Nabrezna 4

971 04 Prievidza

Slovak Republic

Tel: +421 46 543 08 89

Fax: +421 46 543 02 61

E-mail: vupasi@nextra.sk

Web site: www.rcsk.sk

Adopted Responsible Care in 1996

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Health and safety in the workplace - Protection of the environment - Emergency preparedness - Communication - Environmental education - Product Stewardship

2 Indicators of performance

Air emissions - Discharges to water - Waste management - Safety and occupational health - Energy consumption - Water consumption

3 Communication with interested parties

The association continues to work closely with government authorities and co-operates in implementing chemical and environmental legislation harmonised with the European Union legislation.

4 Mutual assistance forums

The ZCHF Responsible Care working group provides assistance to

members undergoing implementation. Seminars on various topics have been successful and will be continued. Responsible Care Committee in co-operation with the Ministry of Environment has organised seminar on Integrated Pollution Prevention and Control, the first draft of Act has been presented by the Ministry of Environment and commented on by seminar participants.

5 Process to encourage full participation of association members

27 companies, representing over 90% of total turnover, are actively implementing Responsible Care.

6 Implementation assurance

Over 40% of companies committed to Responsible Care have gained ISO 14001 certification, undertaken by an independent internationally recognised organisation.

Additional features

Local name Zodpovedná starostlivosť.

ZCHF and the Ministry of Interior have signed an agreement on co-operation in emergency response and accident prevention, the National Emergency Response Centre DINS has been established and became a part of CEFIC network International Chemical Environment ICE, which is a co-operative project amongst chemical companies in the field of transport.

SOUTH AFRICA

Chemical and Allied Industries Association - CAIA

P O Box 91415

Auckland Park 2006

South Africa

Contact Lorraine Lotter

Tel: 27 11 482 1671

Fax: 27 11 726 8310

E-mail: caia@iafrica.com

Web site www.caia.co.za

Adopted Responsible Care in 1994

Program description

1 Codes, guidance notes or checklists for implementation

Management commitments: Health and safety - Storage, distribution and transportation - Pollution prevention and resource efficiency - Community Interaction and Emergency Response - Product Stewardship - Process safety (2003).

CAIA uses Management Practice Standards (MPS) as listed above, together with self-assessment questionnaires.

2 Indicators of performance

Quantitative IoPs are based on the Management Practice Standards and have been collected since 1998. The indicators are reviewed annually.

3 Communication with interested parties

CAIA has established a Voluntary Advisory Panel involving NGOs, labour and the public. Some individual companies are engaged in local community outreach. Returns on the quantitative indicators of performance indicate that over 75% of signatory companies have established CAER structures. During 2001, a series of Responsible Care seminars reached around 620 people, including external stakeholders.

4 Mutual assistance forums

Workshops on various Responsible Care and related topics. One discussion/networking group for interested Responsible Care coordinators, active since 1992 in Natal, and a similar forum launched 1998 in the Cape. The Gauteng (Johannesburg) forum has

its main focus on all aspects and modes of packing, storage and transport both nationally and internationally.

5 Process to encourage full participation of association members
Commitment to Responsible Care is a condition of membership for those joining from 1998. Responsible Care awards scheme launched in 1999. Peer pressure and communication of the benefits of Responsible Care are the primary means of encouraging participation. Extension of Responsible Care along the supply chain is also anticipated to promote greater participation in the initiative.

6 Implementation assurance

Independent verification of service provider implementation of Responsible Care has commenced. Verification protocols are being developed for the remainder of the self-assessments.

Additional features

As well as chemical producers, CAIA membership includes petroleum refineries, bulk storage, warehousing, distributors, hauliers and support industries and others, including industry consultants. Partnership agreements with Drum Reconditioners and Compressed Gas Manufacturers. Close co-operation with the South African Road Freight Association to improve standards and safety of transport of chemicals by road.

SOUTH KOREA

Korea Responsible Care Council - KRCC

6th floor, Yeojundo-Bldg

1-1 Yeonji-Dong

Chongro-Gu, Seoul 110738

Korea

Contact: Young-Chan Kim

Tel: +82 2 744 0116 ext 203

Fax: +82 2 743 1887

E-mail: yckim@mail.kpia.or.kr

Web site: www.krcc.or.kr

Adopted Responsible Care in December 1999

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Process safety - Employee health and safety - Emergency response - Pollution prevention (completed 2001, based on ACC codes but adapted to suit local characteristics)

2 Indicators of performance

To be developed

3 Communication with interested parties

A dialogue process with external stakeholders takes place through an advisory panel with representatives from government authorities, environment-, safety-, and health-related agencies, and academia. A Public Activities Committee has published newsletters, established a KRCC homepage and will publish an annual report at the year-end. KRCC is also initiating dialogue among member companies and encouraging them to address public concerns.

4 Mutual assistance forums

The Implementation Committee is holding education sessions, seminars and other related activities including Peer Reviews. KRCC is developing both in-house and Council-based training processes to help improve member companies' awareness of Responsible Care

5 Process to encourage full participation of association members

KRCC has held workshops and publicity drives to increase KRCC

membership. So far 64 companies, including 45 local firms, representing around 66% of total chemical industry turnover have signed the guiding principles.

6 Implementation assurance

KRCC is developing and implementing a self-evaluation system to enable member companies to verify performance and status against Responsible Care targets. Annual self-evaluation is required from members to assess progress during the year and set out improvement plans for the coming year.

Additional features

Seven organizations combined forces to form the Korea Responsible Care Council:

Korean Petrochemical Industry Association

Korea Petroleum Association

Korea Specialty Chemical Industry Association

Korea Fertilizer Industry Association

Korea Soda Industry Association

American Chamber of Commerce

European Union Chamber of Commerce

SPAIN

Federación Empresarial de la Industria Química Española - FEIQUE

Cl. Hermosilla 31

E - Madrid 28001

Spain

Contact Francisco Pérez

Tel: 34 91 431 7964

Fax: 34 91 576 33 81

E-mail: fp@feique.org

Web site www.feique.org

Adopted Responsible Care in 1993

Program description

1 Codes, guidance notes or checklists for implementation

Codes (updated in 2001): Health and safety protection - Environment protection - Process Safety and Emergency Response - Transport and distribution - Product Stewardship - Communication.

2 Indicators of performance

Safety (10 IoPs) - Environment (14) - Energy (4) - Communication (2) - Product transportation (2)

Feique has continued with its benchmarking initiative for safety IoPs, including contractor LTIR for 2001; 80% of companies responded. The same approach is being considered for other indicators like energy efficiency and COD.

3 Communication with interested parties

Individual member companies have sponsored open days. Feique publishes a Responsible Care report, and about 40% of Responsible Care members have published environmental reports. Annual Spanish Science Education Award. In 2001, Feique and the Ministry of Science and Technology produced a 25-minute film, Chemistry and Us, focusing on the importance of chemicals in improving quality of life, and industry's HSE commitment through Responsible Care. The film was delivered to 8,000 schools and colleges throughout Spain and broadcast on TV. In 2000, Feique and 30 chemical companies in co-operation with the Museum of Science and Technology of Catalonia, sponsored a traveling exhibition on chemistry which will be shown in major cities until 2005.

4 Mutual assistance forums

Contacts and information sharing continues with Ibero-American federations. An updated inventory of Responsible Care documents in Spanish and Portuguese has been issued. Two successful Product Stewardship seminars and regular meetings for Feique Responsible Care steering committee and coordinators. Workshops to improve knowledge of the initiative and exchange experiences for coordinators, technical staff, human resources and communications staff.

5 Process to encourage full participation of association members

Commitment to Responsible Care is not a condition of membership. About 150 companies had signed up by early 2002. Results of an opinion survey conducted among member companies' employees showed the need to improve awareness of Responsible Care. New joiners include chemical distribution companies.

6 Implementation assurance

Internal Feique auditors have visited all companies during the last three years to verify Responsible Care. In future, Feique auditors will only undertake verifications of new signatories and poor performers. In 2001 an internal verification process was established for the six codes of practice requiring self-assessment reports on each code to be sent to Feique every two years. A questionnaire requiring self-assessment on the Responsible Care guiding principles was sent to CEOs to check their level of support for the initiative. Based on responses, a report is sent to Responsible Care coordinators and CEOs identifying opportunities for improvement and listing recommendations for each company.

Additional features

Local name Compromiso de Progreso.

Voluntary agreement on chlorinated solvents seeks to improve management of these products through collaboration between product manufacturers, distributors and final consumers.

SWEDEN

Sveriges Kemiska Industrikontor - KEMIKONTORET

Storgatan 19, Box 5501

SE - 114 85 Stockholm

Sweden

Contact: Inge Lundström

Tel 46 8 783 81 59

Fax 46 8 663 63 23

E-mail ilm@chemind.se

Web site www.chemind.se

Adopted Responsible Care in 1991

Program description

1 Codes, guidance notes or checklists for implementation

Extensive set of Guidance manuals and checklists.

2 Indicators of performance

Training and work environment (6 IoPs) - Air emissions (4) - Water discharges (5) - Waste (4) - Energy consumption (3) - Water consumption (2) - Product Stewardship (3) - Environmental management systems - Environmental reports - Emergency response commitment

The association has been collecting IoPs since 1995, and has published them annually since 1996. Increasing numbers of individual companies publish their own reports with indicators for use with interested parties, authorities and other stakeholders.

3 Communication with interested parties

The association publishes an annual Responsible Care report and has an intensive dialogue with government and the authorities. A Chemistry Day in 2001 to illustrate the benefits of and increase knowledge about chemistry saw around 40 local schools and universities participate. The event received good coverage in the media. The association maintains extensive contacts with schools and teachers. At local level companies have a number of activities to encourage communication with stakeholders.

4 Mutual assistance forums

Regional networks allow for regular exchange of information.

5 Process to encourage full participation of association members

120 out of a total of 158 member companies have signed the Responsible Care commitment. These companies represent more than 95% of total turnover and number of employees. Most member companies are SMEs and the great majority are committed to Responsible Care.

6 Implementation assurance

Companies have conducted their first self-assessment of Responsible Care implementation and approximately 100 self-assessments have been sent to Kemikontoret. A final report of the results will be compiled and presented during 2002. The Responsible Care Progress Report was published for the 7th consecutive year in 2001.

Additional features

Local name: Ansvar & Omsorg

Emergency distribution response scheme - ERC (Emergency Response Centre)

Partnership program: A partnership agreement was signed with the Plastics and Chemicals Federation in 1999.

SWITZERLAND

Société Suisse des Industries Chimiques - SSIC

Nordstrasse 15

Postfach 328

CH - 8035 Zürich

Switzerland

Contact Richard Gamma

Tel: 41 1 368 17 24

Fax: 41 1 368 17 70

E-mail: richard.gamma@sgci.ch

Web site www.sgci.ch

Adopted Responsible Care in 1992

Program description

1 Codes, guidance notes or checklists for implementation

Directions for self-assessment - 32 steps for the implementation of Responsible Care

2 Indicators of performance

Key figures on safety, health and environmental protection.

3 Communication with interested parties

Annual report includes information on Responsible Care. Companies sponsor local and regional open days and other outreach events. Regular meetings between industrial officials and government and NGOs. In 2001, a main topic was improving safety in the transport of dangerous goods and SGCI brought together dangerous goods experts with all relevant partners in the road and rail transportation business. Specific measures to reduce risks of rail transport have been worked out in close cooperation with the authorities and the Swiss Railway.

4 Mutual assistance forums

The association sponsors Responsible Care workshops for members.

5 Process to encourage full participation of association members

At end 2001 around 90% of 200 member companies representing over 95% of total turnover had signed up to Responsible Care. All new members of the association are required to commit to the initiative.

6 Implementation assurance

No self-assessment survey was carried out in 2001.

Additional features

Local name (3 national languages) Fortschritt mit Verantwortung; Le progrès avec notre responsabilité; Il progresso sì, ma con responsabilità.

Most related associations (eg traders, manufacturers and distributors of pharmaceuticals, crop protection, flavours and fragrances) are already part of SSIC.

Emergency distribution response scheme - a list of participating companies is an annex to fire brigades' emergency orders.

TAIWAN

Taiwan Responsible Care Association – TRCA

3rd Floor, 83 Pateh Road, Sec. 4,
Taipei 105

Taiwan

Contact: Tom C. T. Chu

Tel: 886 2 2528 5802

Fax: 886 2 2528 5749

E-mail: trca@ms33.hinet.net

Adopted Responsible Care in 1997

Program description:**1 Codes, guidance notes or checklists for implementation**

Codes: Process safety - Emergency response - Contractor safety - Transportation safety - Waste management and minimization.

Guidelines issued for codes; Distribution code to replace existing Transportation safety code

2 Indicators of performance

Employee fatalities – LTIR - Emissions to air (SOx, NOx, CO2) - COD in effluent wastewater - Energy consumption

3 Communication with interested parties

Development work on advisory panels ongoing; meetings held with academics and experts. TRCA has set up a Communication Committee to establish a work plan and activity schedule. Some companies involved in local outreach efforts.

4 Mutual assistance forums

TRCA is expanding its 'Buddy System' whereby Responsible Care companies mentor/sponsor others to join. Experience sharing at the annual meeting is complemented by additional workshops and seminars covering performance reporting and other topics. TRCA plans to enhance the CEO network and increase frequency of meetings to help familiarize them with Responsible Care implementation. Quarterly meetings held for Responsible Care Coordinators. TRCA issued a CD-ROM providing implementation guidance for each code.

5 Process to encourage full participation of association members

TRCA has set up a Membership Committee focused on recruiting new members and plans to have around 150 companies signed up by end 2004.

6 Implementation assurance

Companies are carrying out self-assessments of Responsible Care implementation during 2002 and TRCA aims to have HSE performance reports from each company. Development of a TRCA verification system is ongoing.

THAILAND

Chemical Industries Club Thailand - CICT

c/o Federation of Thai Industries

Queen Sirikit National Convention Center

Zone C, 4th floor

60 New Rachadapisek Road

Klongtoey

Bangkok 10110

Thailand

Contact Sontirat Kupatavetin

Phone: 662 634 7078 thru 7088 Ext. 101

Fax : 662 634 7142

E mail: toy.kupatavetin@dowcorning.com

Web site: www.fti.or.th

Adopted Responsible Care in 1996

Accepted as RCLG member in 1998

Program description**1 Codes, guidance notes or checklists for implementation**

Codes: Distribution - Community Awareness and Emergency Response - Product Stewardship - Pollution prevention - Employee health and safety - Process safety

2 Indicators of performance

Fatalities - LTRI - Energy consumption - CO2, SOx, NOx - COD (BOD)

3 Communication with interested parties

A Responsible Care committee includes invited members from government sectors and non-profit organizations. Monthly meetings of the Chemical Industry Club committee monitor progress of Responsible Care. A number of companies are involved in local outreach efforts of Responsible Care sub-committees, active in three areas where chemical plants are concentrated. Activities include Open days, 'Safety days', and 'Neighbour visits'.

4 Mutual assistance forums

SMEs helped with implementation by larger, more experienced Responsible Care companies by means of a number of seminars. The FTI-Responsible Care sub-committee is setting up a working group to help codes implementation at site level. Technical assistance provided under partnership program with Japan Chemical Industries Association: Japanese experts did baseline study of Responsible Care implementation status and held two workshops on Responsible Care codes implementation and management for member companies and government representatives. UNEP to introduce APELL (Awareness and Preparedness for Emergencies at Local Level) scheme. Also measures undertaken by the Environmental Research Institute of Chulalongkorn University (ERIC) and the Partnership of Environmental Technology Education (PETE) & US-AEP to improve environmental performance (emissions to water).

5 Process to encourage full participation of association members

The process is in the initiating stage. There were about 80 companies in Thailand signed up to Responsible Care by mid 2002. Thailand aims to have a commitment from over 80% of members by 2007. Internal feedback on Responsible Care awareness is

directly through events to companies such as Dinner talks, Annual Responsible Care meeting and quarterly newsletter.

6 Implementation assurance

Self-assessment of member companies scheduled to start by end 2002.

TURKEY

Türkiye Kimya Sanayicileri Derneği - TKSD

Degirmen Sokak

Sasmaz Sitesi, No:19, D:9

Kozyatagi, TR-81090

Istanbul

Turkey

Contact Caner Zambak

Tel: 90 216 416 7644/416 9439

Fax: 90 216 416 9218

E-mail: czanbak@turk.net

Web site www.tksd.org.tr

Adopted Responsible Care in 1993

Program description**1 Codes, guidance notes or checklists for implementation**

Codes: Community Awareness and Emergency Response - Pollution prevention - Process safety - Distribution - Employee health and safety - Product Stewardship.

Revised guidelines on Codes of Management Practices including management system guidelines published 1999.

2 Indicators of performance

Application of IoPs began in 1998, and members are requested to report annually. IoPs revised in 2000 to enlarge the scope of monitoring and evaluating activities.

3 Communication with interested parties

TKSD staff attend many national technical symposia and make presentations on Responsible Care. TKSD continues its active participation in the Istanbul Chamber of Industry's Environmental Affairs Commission, the Ministry of Environment's regulatory review committee and local government regulatory committees, and publicizes the principles of Responsible Care to emphasize the commitment of the chemical industry to environmental protection efforts. Seminars are held at different universities. A Responsible Care course is run by Istanbul Technical University. In addition to the lecturers from TKSD, member companies present case studies and offer site visits for students.

4 Mutual assistance forums

TKSD continued a program of meetings and workshops. Seminars held regularly at plant level for members.

5 Process to encourage full participation of association members

Responsible Care is mandatory for all new members since 1994. By end 2001, 60 companies had signed up including three new commitments since 2000. Members represent about 60% of Turkish chemical industry by turnover and 20% by employees. The Responsible Care Award Scheme was revised to cover two different categories - Program Fulfillment and Specific Action.

6 Implementation assurance

Annual facility visits are carried out by the TKSD technical staff to evaluate Responsible Care performance. A Code of Management Practices checklist is completed by the company

and reviewed with a company representative and TKSD staff. Facility units are visited and graded, and recommendations made in an audit report.

Additional features

Local name Üçlü Sorumluluk.

UNITED KINGDOM

Chemical Industries Association - CIA

Kings Building

Smith Square

London SW1P 3JJ

United Kingdom

Contact Ian James

Tel: 44 207 963 6717

Fax: 44 207 834 8587

E-mail: jamesi@cia.org.uk

Web site www.cia.org.uk and www.chemical-industry.org.uk

Adopted Responsible Care in 1989

Program description**1 Codes, guidance notes or checklists for implementation**

Guidance: full set of guidance documents covering all areas of company's operations from research and development through disposal of wastes and including community outreach and Product Stewardship guides. Documents developed for all levels of company operations from senior management to plant manager and line employee. Guiding Principles revised 1999.

2 Indicators of performance

Safety - Occupational health - Environment - Distribution - Energy consumption - Communication - Management systems - Product Stewardship.

IoPs published annually, and some aspects verified. The collection of further indicators to meet Cefic HSE reporting requirements was undertaken. Product performance indicator agreed and being piloted.

3 Communication with interested parties

Reputation workshops launched in 2002 to improve quantity and quality of communication with key stakeholders. Around 42% of member companies' manufacturing sites have links with the local community through liaison panels and complaint procedures have been formalized at around 96% of sites. In addition to the association's Indicators of Performance Report, most members' manufacturing sites produce their own performance reports. CIA makes use of opinion formers groups for the presentation of performance indicator data and other HSE data.

4 Mutual assistance forums

A network of 25 Responsible Care regional "cells" provide a means of exchanging implementation experiences and best practices. A special website for the cells was piloted in 2001: it provides an electronic notice board and write-access to support implementation. Responsible Care Leadership Groups have been established for CEOs and other senior management. National seminars and workshops on Responsible Care, Product Stewardship and HS&E issues are held regularly. Best practice guidance documents, plus task forces and committees in operation.

5 Process to encourage full participation of association members

Responsible Care is an obligation of CIA membership. CIA members represent 70% of total UK chemical sales. All 170 members have signed the Guiding Principles, which were reissued in 1999.

This represents nearly all the major UK chemical manufacturing sites but only around 40% of employees in the entire sector. National seminar, IoPs and initiatives such as the UK energy efficiency agreement create opportunities for promotion. Annual Responsible Care Award – 2002 will be the seventh year of the scheme – for which CIA has determined an HSE performance and management level above which manufacturing sites became eligible ‘contenders’.

6 Implementation assurance

Self-assessment to the CIA's Responsible Care Management System was 100% completed by member companies by the end of the first quarter 2001. The names of the 232 sites that had returned their completed assessments to the CIA were posted on the CIA's public websites. This implementation assurance will continue on a regular three-year cycle and is mandatory for all member companies. Following the launch of a voluntary third party certification process for Responsible Care Management Systems (RCMS) in 2000, and the award of the first two certificates, the Association has been building the business case for certification. Auditors from four certification bodies have now been CIA-qualified to conduct audits – the process for controlling the quality and scope of the process.

Additional features

Partnership Program with British Chemical Distributors and Traders Association. Partnership agreement with British Lubricants Federation. Liaison with the British Coatings Federation, which has developed its own Coatings Care program. Emergency distribution response system - CHEMSAFE. Participation mandatory at level 1, ie provision of 24 hour telephone information.

SH&E voluntary agreement – CIA's Energy Efficiency Agreement has funded over 100 on-site energy audits at SMEs.

UNITED STATES

American Chemistry Council
1300 Wilson Boulevard
Arlington, Va. 22209
USA

Contact Dr. Terry F. Yosie

Tel: 1 703 741-5800

Fax: 1 703 741-6301

E-mail: Terry_Yosie@americanchemistry.com

Web site: www.americanchemistry.com

Program description

1 Codes, guidance notes or checklists for implementation

Community Awareness and Emergency Response Code - Pollution Prevention Code - Process Safety Code - Distribution Code - Employee, Health and Safety Code - Product Stewardship Code - Security Code (adopted June 2002)

During 2003-2004, members will implement a Responsible Care Management System (RCMS) that embodies a modernized approach to management. The RCMS will replace the current Codes of Management Practices and incorporate best practices from around the world on environmental health, safety and security performance. The RCMS will be subject to independent third party certification.

2 Indicators of Performance

Pollution Prevention (Toxics Release Inventory); Occupational

Injury and Illness Reports; Facility Incidents; Transportation Incidents (all aggregated by ACC annually).

In January 2004, members and the ACC will institute a system to track and report on approximately two dozen performance metrics. These will address performance on economic, environmental, societal and security issues. Public reports for some metrics will be available on a company-by-company basis and provided in industry -wide aggregated form for others.

3 Communication with interested parties

Beginning in 2002, the ACC is institutionalizing a Leadership Dialogue comprised of external stakeholders representing academia, community leaders, former senior government officials and non-governmental organizations from the United States and beyond. The Leadership Dialogue will provide advice and counsel to ACC and senior industry executives on a variety of issues, including: globalization, the use of science in policymaking, Responsible Care, sustainable development, trade and the environment and others.

Member companies also support nearly 300 community advisory panels in locations where they have facilities. The panels provide mechanisms to address community concerns regarding the industry and/or specific facilities. Companies also host open houses and participate on local community groups to address Responsible Care issues of mutual concern.

4 Mutual assistance forums

The American Chemistry Council sponsors numerous workshops on Responsible Care implementation, including an annual Responsible Care conference attended by over 400 industry professionals. Regional Executive Leader Groups for Presidents and CEOs meet periodically to review Responsible Care progress. Similarly, regional Responsible Care coordinator networks for plant managers and code stewards meet 3-5 times a year to discuss Responsible Care implementation and share effective practices. Virtual mutual assistance activities also take place on the Council's website, where Responsible Care ideas and examples of excellence are exchanged.

5 Process to encourage full participation of association members
Responsible Care is an obligation of membership; failure to participate can lead to expulsion. ACC members represent approximately 90% of total US chemical production.

6 Implementation assurance

The Council is transitioning from its current Responsible Care peer review process, the Responsible Care management system verification (MSV), to a mandatory third-party certification process for all members. In addition, a joint audit process combining Responsible Care and ISO 14001 is available. Both audit processes will include site and headquarters requirements and will be based on the newly developed Responsible Care Management System model.

Additional features

In June 2002, the ACC Board of Directors made significant enhancements to Responsible Care, enabling the industry to obtain continued performance improvements and increased business value through Responsible Care. The enhancements include:

- New performance metrics which encompass economic, environmental, health and safety, societal and security performance indicators.

- Adoption of a modernized Responsible Care Management System.
- Mandatory independent third-party certification.
- Transparency of individual company performance.
- A new Responsible Care Security Code.

Through the Responsible Care Partnership Program, Responsible Care is extended through the chemistry industry's supply chain. 87 Partner companies are implementing Responsible Care.

ACC also maintains CHEMTREC - a globally recognized emergency response center.

In addition, the ACC commitment to Responsible Care continues to support a major effort to expand testing on high production volume chemicals and long-range research on the public health and environmental impacts of chemical products and processes.

URUGUAY

Asociación de Industrias Químicas del Uruguay - ASIQUR

Av. Italia 6101

Montevideo

Uruguay

Contact Ing. Oscar Rufener

Tel: 598 2 6040464

Fax: 598 2 6040495

E-mail: asiqur@ciu.com.uy

Web site: www.ciu.com.uy

Adopted Responsible Care in 1998

Program description

1 Codes, guidance notes or checklists for implementation

Codes: Community Awareness and Emergency Response - Pollution prevention - Process safety - Distribution - Employee health & safety - Product Stewardship.

Guidance notes include monthly publication of a Responsible Care bulletin containing recommendations and guidelines for implementation

2 Indicators of performance

Annual report on: Number of injuries and sickness - Number of transportation incidents - Number of environmental incidents - Quantities of gaseous, liquid and solid wastes, etc. The first report was issued 2001.

3 Communication with interested parties

Circulation of a brochure explaining the main points and achievements of Responsible Care. The authorities are invited to attend presentations and seminars related to Responsible Care.

4 Mutual assistance forums

Environmental Committee meets every month to track Responsible Care implementation and share best practices and experiences.

5 Process to encourage full participation of association members

Around 65% of association members have signed up to Responsible Care. Peer pressure and communication of the benefits of Responsible Care are the main means of encouraging companies to commit to the initiative.

6 Implementation assurance

An audit-based verification system started in 2002 is being conducted by a leading external verification firm LATU (Laboratorio Tecnológico del Uruguay). 100% of Responsible Care companies expected to be verified by end June 2002.

Country	LTIR		SO ₂ (tonnes)		COD (tonnes of O ₂)		No. employees in RC	
	1999	2000	1999	2000	1999	2000	1999	2000
Argentina	19.6	16.6	2259	631	7431	6629	6760	5342
Australia	4.8	6.5	na	2324	na	na	na	19000
Austria	13.4	13.2	833	na	10320	na	12927	13629
Belgium	18.47	16.25	11048	na	30773	na	97167	100166
Brazil	5.13	4.64	26068	22906	38938	22433	na	64757
Canada	1.66	2.44	28900	28300	na	na	25700	28800
Chile	23.01	22.82	na	na	na	na	11550	11600
Colombia	15.03	na	4106	na	13183	na	10301	na
Czech Republic	9.25	7.36	20500	18197	11900	12711	42000	33000
Denmark	12.6	11.9	1086	942	4469	3493	13421	7057
Ecuador	na	11.03	na	na	na	na	na	5758
Finland	16.9	15.5	16940	14200	8650	9730	22800	24900
France	8.4	8.2	78000	67000	53500	66000	113500	115500
Germany	12.83	12.42	21724	18414	46117	46202	429302	391277
Greece	8.47	na	na	720	na	614	2073	na
Hong Kong (1)	na	na	na	na	na	na	na	na
Hungary	7.42	11.6	2631	na	5210	na	29000	28000
India	7.44	6.9	36330	33533	34960	29300	61200	63760
Indonesia	1.9	0.3	na	na	na	na	na	25000
Ireland	na	na	na	na	na	na	na	na
Israel (2)	na	na	na	na	na	na	na	na
Italy	14.04	14.24	43500	16300	27300	25700	65900	63000
Japan	0.26	0.19	61000	59000	37000	34000	243000	206000
Malaysia (1)	na	na	na	na	na	na	na	na
Mexico	10.8	7.2	3998	na	8396	9051	35000	35000
Morocco	5	6	na	na	na	na	40000	41000
Netherlands	2.11	2.51	6728	4917	9	7.7	32965	na
New Zealand	0.03	0.02	n,a	n,a	na	na	30000	29000
Norway	10.9	13.1	2803	na	44150	na	6720	na
Peru (1)	na	na	na	na	na	na	na	na
Philippines (1)	na	na	na	na	na	na	na	na
Poland	4.27	7.31	53906	38877	6547	7365	29139	25441
Portugal	14.3	13.9	8413	7543	3715	2635	5766	5608
Singapore (1)	na	na	na	na	na	na	na	na
Slovak Republic	2.5	6.6	31985	22721	9087	8707	28845	25745
South Africa	0.12	na	31807	na	70	na	16177	na
South Korea	19.15	26.5	21864	23120	11311	9938	34491	34491
Spain	13.2	11.3	23142	19716	16021	15842	27992	28192
Sweden	4.4	4.3	7336	7328	9500	9200	34000	34000
Switzerland	11.1	10.8	700	690	5600	5700	43800	42000
Taiwan	4.41	2.94	26453	23573	24849	19436	27391	28920
Thailand	1.41	1.18	10273	9046	9901	9293	15518	15644
Turkey	32	20.8	47395	na	28828	na	12000	11237
United Kingdom	6.88	6.59	36222	30254	133980	115449	96841	94907
United States	1.68	1.44	na	na	na	na	435000	426000
Uruguay	5	6	570	550	30	18	984	865

(1): Data not available

(2): New member